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Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: MARK BERCH Examiner #: 59193 Date: 11/27/06

Art Unit: 1624 Phone Number: 2-0663 Serial Number: 10044486

Location (Bldg/Room#): 5C01 (Mailbox #): 5C18 Results Format Preferred (circle): PAPER DISK

****

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: _____

Inventors (please provide full names): _____

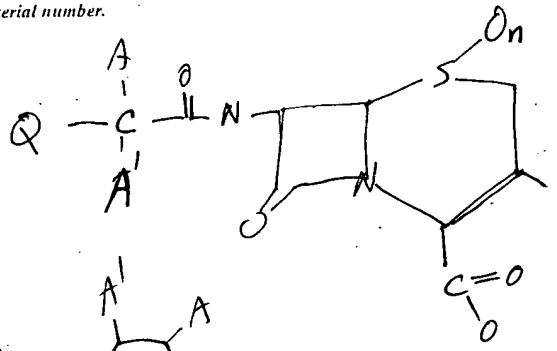
_____

Earliest Priority Date: _____

Search Topic:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

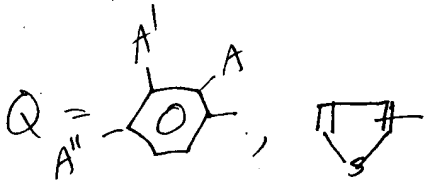
For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*



A, A', A'' = H/CH3

SID-chain only

C≡L-AM



or N≡C—

L = C/N

n = 1 or 2 (not zero)

Compound must have linked to it one of these terms: fluorogenic, flourescent, dye, chromophore

****

STAFF USE ONLY

Searcher: _____

Searcher Phone #: _____

Searcher Location: _____

Date Searcher Picked Up: _____

Date Completed: 12/11

Searcher Prep & Review Time: _____

Online Time: 25

Type of Search

_____ NA Sequence (#)

_____ AA Sequence (#)

1 Structure (#)

_____ Bibliographic

_____ Litigation

_____ Fulltext

_____ Other

Vendors and cost where applicable

297.07 STN _____ Dialog

_____ Questel/Orbit _____ Lexis/Nexis

_____ Westlaw _____ WWW/Internet

____ In-house sequence systems

____ Commercial ____ Oligomer ____ Score/Length

____ Interference ____ SPDI ____ Encode/Transl

_____ Other (specify)

=> file registry
FILE 'REGISTRY' ENTERED AT 14:49:25 ON 11 DEC 2006
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STRUCTURE FILE UPDATES: 10 DEC 2006 HIGHEST RN 915124-84-4
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TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

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=> file caplus
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FILE COVERS 1907 - 11 Dec 2006 VOL 145 ISS 25
FILE LAST UPDATED: 10 Dec 2006 (20061210/ED)

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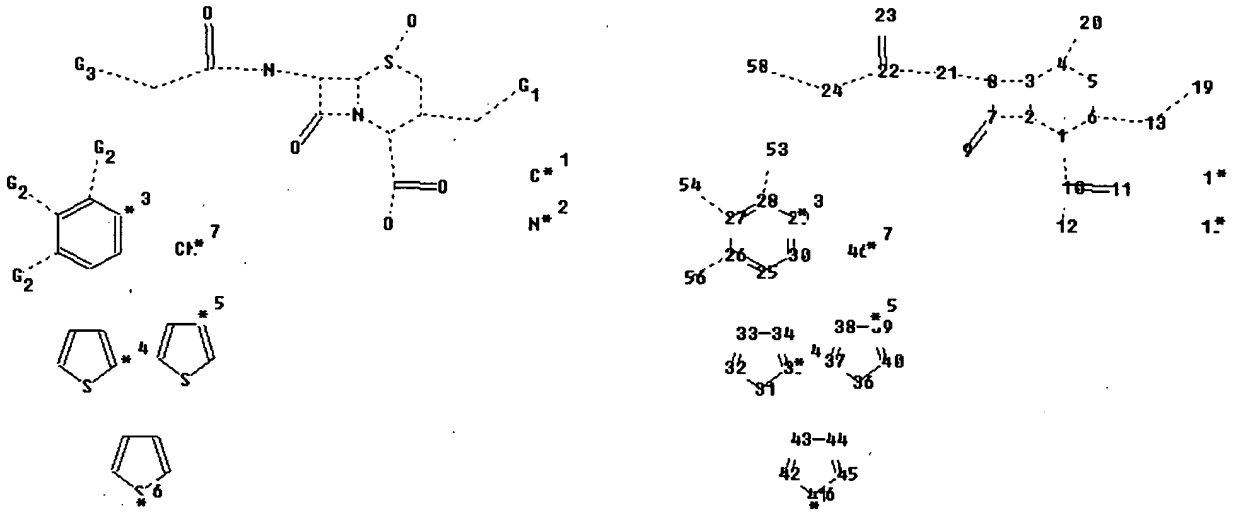
http://www.cas.org/infopolicy.html
'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

=> d stat que L10
L1 STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation:
Uploading L1.str



chain nodes :
9 10 11 12 13 19 20 21 22 23 24 46 53 54 56 58
ring nodes :
1 2 3 4 5 6 7 8 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
40 41 42 43 44 45
ring/chain nodes :
14 15
chain bonds :
1-10 4-20 6-13 7-9 8-21 10-11 10-12 13-19 21-22 22-23 22-24 24-58 26-56
27-54 28-53
ring bonds :
1-2 1-6 2-3 2-7 3-4 3-8 4-5 5-6 7-8 25-26 25-30 26-27 27-28 28-29 29-
30
31-32 31-35 32-33 33-34 34-35 36-37 36-40 37-38 38-39 39-40 41-42 41-45
42-43 43-44
44-45
exact/norm bonds :
1-2 1-6 1-10 2-3 2-7 3-4 3-8 4-5 4-20 5-6 6-13 7-8 7-9 8-21 10-11
10-12 13-19 21-22 22-23 22-24 24-58 26-56 27-54 28-53 31-32 31-35 32-33
33-34 34-35 36-37
36-40 37-38 38-39 39-40 41-42 41-45 42-43 43-44 44-45
normalized bonds :
25-26 25-30 26-27 27-28 28-29 29-30

G1:[*1],[*2]

G2:H,CH3

G3:[*3],[*4],[*5],[*6],[*7]

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:CLASS 10:CLASS

```
11:CLASS  12:CLASS  13:CLASS  14:CLASS  15:CLASS  19:CLASS  20:CLASS  21:CLASS
22:CLASS  23:CLASS
24:CLASS  25:Atom  26:Atom  27:Atom  28:Atom  29:Atom  30:Atom  31:Atom  32:Atom
33:Atom  34:Atom
35:Atom  36:Atom  37:Atom  38:Atom  39:Atom  40:Atom  41:Atom  42:Atom  43:Atom
44:Atom  45:Atom
46:CLASS  53:CLASS  54:CLASS  56:CLASS  58:CLASS
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```
L3          178 SEA FILE=REGISTRY SSS FUL L1
L4           82 SEA FILE=CAPLUS ABB=ON  PLU=ON  L3
L5         4869 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?FLUOROGEN?/BI
L6       484544 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?FLUORESCEN?/BI
L7       380423 SEA FILE=CAPLUS ABB=ON  PLU=ON  DYE?/BI
L8       381931 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?DYE?/BI
L9        39403 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?CHROMOPHOR?/BI
L10           7 SEA FILE=CAPLUS ABB=ON  PLU=ON  L4 AND (L5 OR L6 OR L7 OR L8
                OR L9)
```

```
=> d stat que L14
L1              STR

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

Structure attributes must be viewed using STN Express query preparation:
Uploading L1.str
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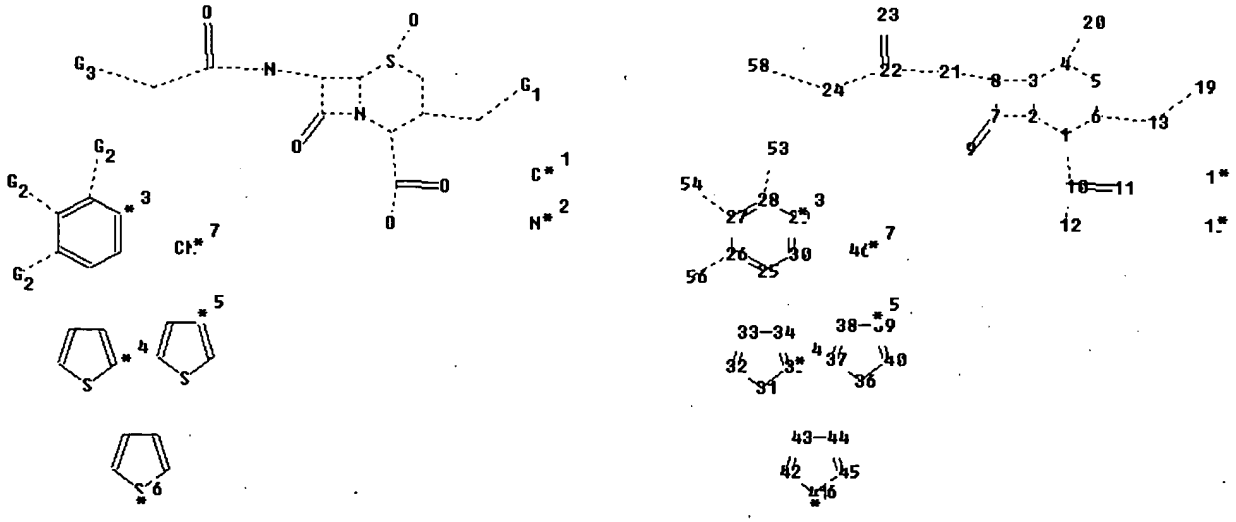

```
chain nodes :
9  10  11  12  13  19  20  21  22  23  24  46  53  54  56  58
ring nodes :
1  2  3  4  5  6  7  8  25  26  27  28  29  30  31  32  33  34  35  36  37  38  39
```

```
40  41  42  43  44  45
ring/chain nodes :
14  15
chain bonds :
1-10  4-20  6-13  7-9  8-21  10-11  10-12  13-19  21-22  22-23  22-24  24-58  26-56
27-54  28-53
ring bonds :
1-2  1-6  2-3  2-7  3-4  3-8  4-5  5-6  7-8  25-26  25-30  26-27  27-28  28-29  29-
30
31-32  31-35  32-33  33-34  34-35  36-37  36-40  37-38  38-39  39-40  41-42  41-45
42-43  43-44
44-45
exact/norm bonds :
1-2  1-6  1-10  2-3  2-7  3-4  3-8  4-5  4-20  5-6  6-13  7-8  7-9  8-21  10-11
10-12  13-19  21-22  22-23  22-24  24-58  26-56  27-54  28-53  31-32  31-35  32-33
33-34  34-35  36-37
36-40  37-38  38-39  39-40  41-42  41-45  42-43  43-44  44-45
normalized bonds :
25-26  25-30  26-27  27-28  28-29  29-30


G1:[*1],[*2]

G2:H,CH3

G3:[*3],[*4],[*5],[*6],[*7]

Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  7:Atom  8:Atom  9:CLASS  10:CLASS
11:CLASS  12:CLASS  13:CLASS  14:CLASS  15:CLASS  19:CLASS  20:CLASS  21:CLASS
22:CLASS  23:CLASS
24:CLASS  25:Atom  26:Atom  27:Atom  28:Atom  29:Atom  30:Atom  31:Atom  32:Atom
33:Atom  34:Atom
35:Atom  36:Atom  37:Atom  38:Atom  39:Atom  40:Atom  41:Atom  42:Atom  43:Atom
44:Atom  45:Atom
46:CLASS  53:CLASS  54:CLASS  56:CLASS  58:CLASS



L3          178 SEA FILE=REGISTRY SSS FUL L1
L4           82 SEA FILE=CAPLUS ABB=ON  PLU=ON  L3
L13       11130 SEA FILE=CAPLUS ABB=ON  PLU=ON  ?FLUOROPHOR?/BI
L14           1 SEA FILE=CAPLUS ABB=ON  PLU=ON  L4 AND L13


=> file uspatfull
FILE 'USPATFULL' ENTERED AT 14:51:22 ON 11 DEC 2006
CA INDEXING COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 7 Dec 2006 (20061207/PD)
FILE LAST UPDATED: 7 Dec 2006 (20061207/ED)
HIGHEST GRANTED PATENT NUMBER: US7146645
HIGHEST APPLICATION PUBLICATION NUMBER: US2006277640
CA INDEXING IS CURRENT THROUGH 7 Dec 2006 (20061207/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 7 Dec 2006 (20061207/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006
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=> d stat que L23
L1 STR

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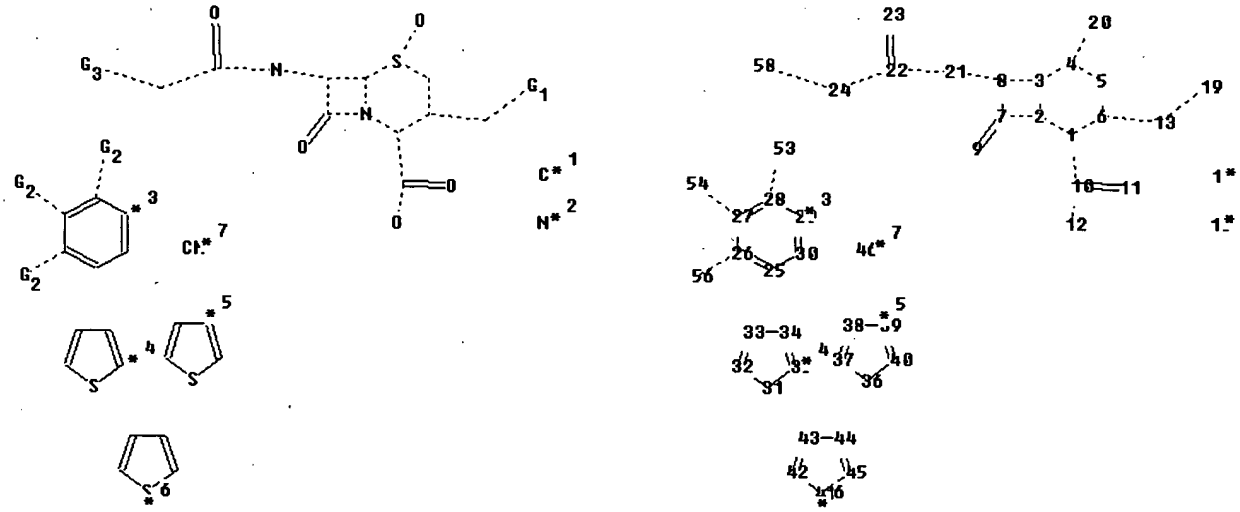
Uploading L1.str



chain nodes :
9 10 11 12 13 19 20 21 22 23 24 46 53 54 56 58
ring nodes :
1 2 3 4 5 6 7 8 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39
40 41 42 43 44 45
ring/chain nodes :
14 15
chain bonds :
1-10 4-20 6-13 7-9 8-21 10-11 10-12 13-19 21-22 22-23 22-24 24-58 26-56
27-54 28-53
ring bonds :
1-2 1-6 2-3 2-7 3-4 3-8 4-5 5-6 7-8 25-26 25-30 26-27 27-28 28-29 29-
30
31-32 31-35 32-33 33-34 34-35 36-37 36-40 37-38 38-39 39-40 41-42 41-45
42-43 43-44
44-45
exact/norm bonds :
1-2 1-6 1-10 2-3 2-7 3-4 3-8 4-5 4-20 5-6 6-13 7-8 7-9 8-21 10-11
10-12 13-19 21-22 22-23 22-24 24-58 26-56 27-54 28-53 31-32 31-35 32-33
33-34 34-35 36-37
36-40 37-38 38-39 39-40 41-42 41-45 42-43 43-44 44-45
normalized bonds :
25-26 25-30 26-27 27-28 28-29 29-30

G1:[*1],[*2]

G2:H,CH3

G3:[*3],[*4],[*5],[*6],[*7]

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:CLASS 10:CLASS
11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 19:CLASS 20:CLASS 21:CLASS
22:CLASS 23:CLASS
24:CLASS 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:Atom 31:Atom 32:Atom
33:Atom 34:Atom
35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 40:Atom 41:Atom 42:Atom 43:Atom
44:Atom 45:Atom
46:CLASS 53:CLASS 54:CLASS 56:CLASS 58:CLASS

L3 178 SEA FILE=REGISTRY SSS FUL L1
L15 36 SEA FILE=USPATFULL ABB=ON PLU=ON L3
L16 6627 SEA FILE=USPATFULL ABB=ON PLU=ON ?FLUOROGEN?
L17 208657 SEA FILE=USPATFULL ABB=ON PLU=ON ?FLUORESCEN?
L18 267900 SEA FILE=USPATFULL ABB=ON PLU=ON DYE?
L19 20051 SEA FILE=USPATFULL ABB=ON PLU=ON ?CHROMOPHOR?
L20 18544 SEA FILE=USPATFULL ABB=ON PLU=ON ?FLUOROPHOR?
L21 11 SEA FILE=USPATFULL ABB=ON PLU=ON L15 AND (L16 OR L17 OR L18 OR L19 OR L20)
L22 5 SEA FILE=USPATFULL ABB=ON PLU=ON (WO2002068678/PN OR WO2004090104/PN OR WO2005059163/PN OR WO2005071096/PN OR CA2434679/PN OR EP1385853/PN OR EP1616032/PN OR EP1674579/PN OR EP1704244/PN OR EP1711504/PN OR JP2005501806/PN OR US2003003526/PN OR US2005118669/PN OR US2005181469/PN OR US2005227309/PN OR US2005244907/PN OR WO2005024049/PN OR WO2006085978/PN)
L23 6 SEA FILE=USPATFULL ABB=ON PLU=ON L21 NOT L22

=> dup rem L10 L14 L23
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PROCESSING COMPLETED FOR L10
PROCESSING COMPLETED FOR L14
PROCESSING COMPLETED FOR L23
L28 13 DUP REM L10 L14 L23 (1 DUPLICATE REMOVED)
ANSWERS '1-7' FROM FILE CAPLUS
ANSWERS '8-13' FROM FILE USPATFULL

=> d ibib abs hitind hitstr L28 1-7; d ibib abs kwic hitstr L28 8-13

L28 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2005:474830 CAPLUS Full-text
DOCUMENT NUMBER: 143:22126
TITLE: ***Fluorogenic*** β-lactamase substrate containing a phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression

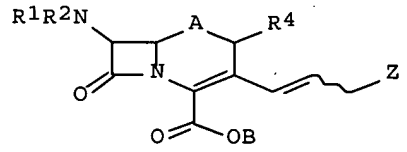
INVENTOR(S): Tsien, Roger Y.; Rao, Jianghong
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 40 pp., Cont.-in-part of U.S. Ser. No. 44,486.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005118669	A1	20050602	US 2004-884019	20040702
US 2003003526	A1	20030102	US 2002-44486	20020111
US 2005181469	A1	20050818	US 2005-93399	20050329
WO 2006085978	A2	20060817	WO 2005-US23947	20050630

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.:		
US 2001-261313P	P	20010112
US 2002-44486	A2	20020111
US 2004-884019	A	20040702

OTHER SOURCE(S): MARPAT 143:22126
GI



I

AB Provided are ***fluorescent*** substrates for β-lactamases having the general formula I (R1,R2 = H, benzyl, 2-thienylmethyl, cyanomethyl; B = H, physiol. acceptable salts or metal, ester groups, ammonium cations, -CHR5OCO(CH2)nCH3, -CHR5OCOC(CH3)3, acylthiomethyl, acyloxy-α- benzyl, δ-butyrolactonyl, methoxycarbonyloxymethyl, Ph, methylsulphinylmethyl, δ-morpholinoethyl, dialkylaminoethyl, dislkylaminocarbonyloxymethyl; R4,R5 = H, lower alkyl; A = S, O, SO, SO2, CH2; Z = a donor ***fluorescent*** moiety that links to the lactam-containing group' n = 0-10). VA new class of small ***fluorogenic*** substrates that work by releasing a phenolate from a vinylogous cephalosporin is reported. The β-lactam ring is cleaved by a β-lactamase enzyme effective to free a fluorophore. Methods of assaying β-lactamase activity and monitoring

expression in systems using beta-lactamase as a reporter gene are also disclosed.

IC ICM C12Q001-18
ICS C07D501-14

INCL 435032000; 540222000

CC 7-1 (Enzymes)
Section cross-reference(s): 3

ST phenolic ***dye*** ***fluorescent*** beta lactamase detn reporter gene expression; fluorophore beta lactam ring cleavage lactamase

IT Flow cytometry
(FACS (***fluorescence***-activated cell sorting); ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT ***Dyes***
Enzyme kinetics
Fluorescent substances
Fluorometry
Michaelis constant
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Reporter gene
RL: ANT (Analyte); ANST (Analytical study)
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Phenols, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Animal cell
(mammalian, reporter gene expression in; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Ring opening
(of β-lactam; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Biological transport
(permeation, membrane-permeant β-lactamase substrate; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Lactams
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(β-, ring cleavage; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT Mutagenesis
(β-lactamase; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT 91-64-5, Coumarin 93-35-6D, Umbelliferone, derivs. 635-78-9, Resorufin 2321-07-5, Fluorescein

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***dye***, substrate containing; ***fluorogenic***
β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT 9073-60-3P
RL: ANT (Analyte); BPN (Biosynthetic preparation); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT 609812-88-6P ***852671-27-3P 852671-28-4P 852671-29-5P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

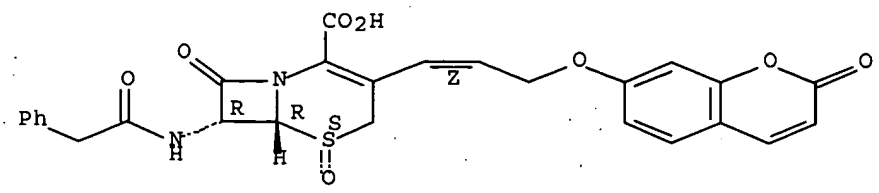
IT 93-35-6, 7-Hydroxycoumarin 603-35-0, Triphenylphosphine, reactions 937-14-4, m-CPBA 7252-83-7 34994-50-8, Resorufin sodium salt 39098-97-0, 2-Thiopheneacetyl chloride 64308-63-0 79349-53-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** β-lactamase substrate; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT 16851-02-8P 26748-89-0P 33748-22-0P 70752-63-5P 107550-89-0P 609812-77-3P 609812-79-5P 609812-80-8P 609812-81-9P 609812-83-1P ***852671-30-8P 852671-32-0P***
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** β-lactamase substrate; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

IT ***852671-27-3P 852671-28-4P 852671-29-5P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

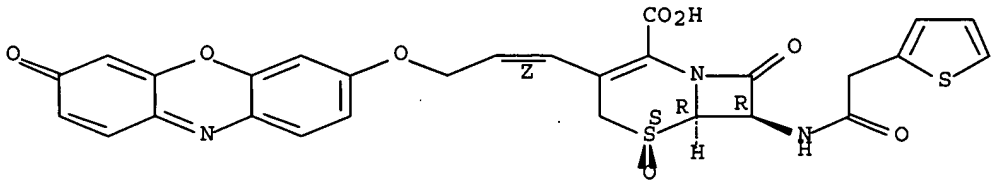
RN 852671-27-3 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-, 5-oxide, (5S,6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



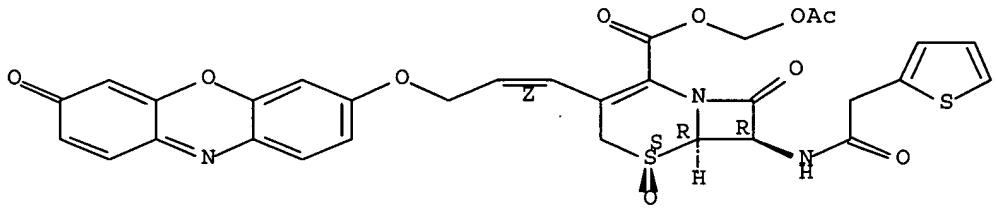
RN 852671-28-4 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5-oxide, (5S,6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



RN 852671-29-5 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, (acetyloxy)methyl ester, 5-oxide, (5S,6R,7R)- (9CI) (CA INDEX NAME)

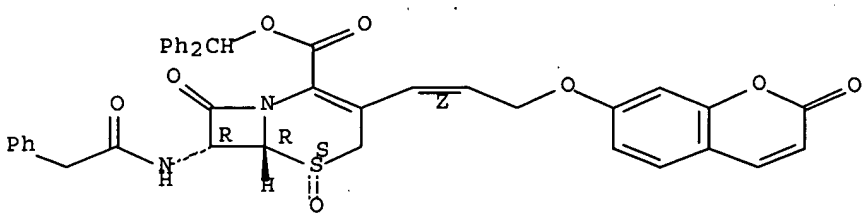
Absolute stereochemistry.
Double bond geometry as shown.



IT ***852671-30-8P 852671-32-0P***
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** β-lactamase substrate; ***fluorogenic*** β-lactamase substrate containing phenolic ***dye*** and vinylogous cephalosporin, and use for monitoring β-lactamase reporter gene expression)

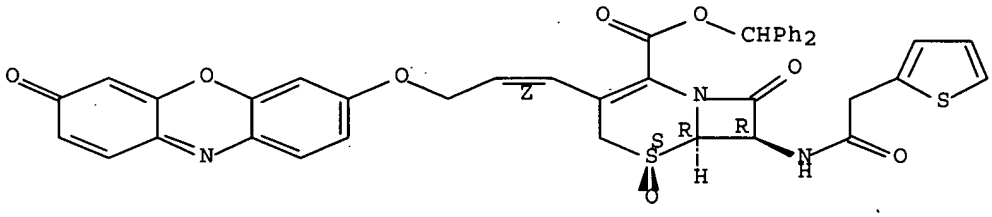
RN 852671-30-8 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, (5S,6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



RN 852671-32-0 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, (5S,6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:697024 CAPLUS Full-text
DOCUMENT NUMBER: 143:189108
TITLE: ***Fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay
INVENTOR(S): Corry, Schuyler; Downey, William; Filanoski, Brian; Gee, Kyle; Greenfield, I. Lawrence; Hirsch, James; Johnson, Iain; Rukavishnikov, Aleksey
PATENT ASSIGNEE(S): Molecular Probes, Inc., USA
SOURCE: PCT Int. Appl., 234 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005071096	A2	20050804	WO 2005-US1901	20050121
WO 2005071096	A3	20051215		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2005227309 A1 20051013 US 2005-40924 20050121

EP 1711504 A2 20061018 EP 2005-711754 20050121

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

PRIORITY APPLN. INFO.: US 2004-538357P P 20040121

WO 2005-US1901 W 20050121

OTHER SOURCE(S): MARPAT 143:189108

AB The present invention relates to compds. that are substrates for an enzyme, and upon reaction with the enzyme provide a detectable response, such as an optically detectable response (such as ***fluorescence*** changes). In particular, the compds. have utility in detecting the presence of a β-lactamase in a sample. The ***fluorogenic*** substrates of β-lactamase comprise: (a) a β-lactamase substrate moiety, e.g. β-lactam moiety, (b) a first ***fluorescent dye*** moiety, and (c) a second, optional ***fluorescent dye*** moiety. Preparation of ***fluorogenic*** substrates for β-lactamase is reported. In addition to the compds., methods are disclosed for analyzing a sample for the presence of a β-lactamase, for example, as an indicator of expression of a nucleic acid sequence including a sequence coding for a β-lactamase. Kits are disclosed that include the disclosed compds. and addnl. components, for example, cells, antibodies, a β-lactamase or instructions for using the components in an assay, such as an immunoassay (e.g., ELISA).

IC ICM C12Q001-00

CC 7-1 (Enzymes)
Section cross-reference(s): 3, 9, 27, 28

ST fluorometry beta lactamase detn ***fluorogenic*** substrate gene expression immunoassay

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(conjugates; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Immunoassay
(enzyme-linked immunosorbent assay; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Enzyme immunoassay
Fluorometry
Test kits
(***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Antigens
RL: ANT (Analyte); ANST (Analytical study)
(***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Reporter gene
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT ***Fluorescent dyes***
Fluorescent indicators
Fluorescent substances
(substrates containing; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT Lactams
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(β-, substrates containing; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT 9073-60-3
RL: ANT (Analyte); ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT 861669-38-7P 861669-39-8P 861669-40-1P 861669-41-2P 861669-42-3P
861669-43-4P 861669-44-5P 861669-45-6P 861669-46-7P 861669-47-8P
861669-48-9P 861669-49-0P 861669-50-3P 861669-51-4P 861669-52-5P
861669-53-6P 861669-54-7P 861669-55-8P 861669-56-9P 861669-57-0P
861669-58-1P 861669-59-2P 861669-61-6P 861669-62-7P 861669-63-8P
861669-64-9P 861669-66-1P 861669-67-2P 861669-72-9P
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

IT 861669-60-5P 861669-65-0P 861669-68-3P 861669-69-4P 861669-70-7P
861669-71-8P 861669-88-7P ***861670-03-3P*** 861670-09-9P
861670-13-5P 861883-90-1P 861883-93-4P
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

IT 58-71-9 76-54-0, 2',7'-Dichlorofluorescein 90-33-5,
7-Hydroxy-4-methylcoumarin 99-98-9 100-68-5, Thioanisol 106-95-6,
Allyl bromide, reactions 118-75-2, Tetrachloro-1,4-benzoquinone,
reactions 122-59-8, Phenoxyacetic acid 303-07-1, 2,6-Dihydroxybenzoic
acid 635-93-8, 5-Chlorosalicylaldehyde 722-27-0 957-68-6,
7-Aminocephalosporanic acid 1026-04-6 2321-07-5, Fluorescein
3163-07-3, 4-Nitroresorcinol 4743-17-3, 5-Chloroisatoic anhydride
7252-83-7, Bromoacetaldehyde dimethyl acetal 16024-58-1 19766-89-3,
Sodium 2-ethylhexanoate 28683-92-3 40630-84-0, Allyl bromoacetate
79349-53-4 104949-45-3 118290-05-4 129393-69-7 165599-63-3
215868-23-8 861670-07-7 861883-91-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

IT 5202-85-7P, 5-Chloroanthranilamide 10390-44-0P 101516-66-9P
115622-74-7P 855946-39-3P 861669-36-5P 861669-37-6P 861669-73-0P
861669-74-1P 861669-76-3P 861669-77-4P 861669-78-5P 861669-79-6P
861669-80-9P 861669-81-0P 861669-82-1P 861669-83-2P 861669-84-3P
861669-85-4P 861669-86-5P 861669-87-6P 861669-89-8P 861669-90-1P
861669-91-2P 861669-92-3P 861669-93-4P 861669-94-5P 861669-95-6P
861669-96-7P 861669-97-8P 861669-98-9P 861669-99-0P

861670-00-0P 861670-01-1P 861670-02-2P 861670-04-4P 861670-05-5P
861670-06-6P 861670-08-8P 861670-10-2P 861670-11-3P 861670-12-4P
861883-89-8P 861883-92-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

IT 233759-98-3P 335193-91-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

IT 861868-25-9 861868-26-0 861868-27-1 861868-28-2 861868-29-3
861868-31-7 861868-32-8 861868-33-9 861868-34-0 861868-35-1
861868-36-2 861868-37-3 861868-38-4 861868-39-5 861868-40-8
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861868-46-4 861868-47-5 861868-48-6 861868-49-7 861868-50-0
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861868-56-6 861868-57-7 861868-58-8 861868-59-9 861868-60-2
861868-61-3 861868-62-4 861868-63-5 861868-64-6 861868-65-7
861868-66-8 861868-67-9 861868-68-0
RL: PRP (Properties)
(unclaimed nucleotide sequence; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT 861868-30-6
RL: PRP (Properties)
(unclaimed protein sequence; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

IT 292620-73-6 297180-93-9 497257-81-5 636564-46-0 636564-47-1
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636564-54-0 636564-55-1 636564-56-2 636564-57-3 636564-58-4
636564-59-5 636564-60-8 636564-61-9 636564-62-0 636564-63-1
636564-64-2 636564-65-3 636564-66-4 636564-68-6 636564-69-7
636564-70-0 636564-71-1 636564-72-2 636564-73-3 636564-74-4
636564-75-5 636564-77-7 636564-78-8 636564-79-9 636564-80-2
636564-81-3 636564-83-5 636564-84-6 636564-85-7 636564-86-8
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636565-02-1 636565-03-2 636565-04-3 636565-05-4 636565-06-5
636565-07-6 636565-08-7 857248-36-3
RL: PRP (Properties)
(unclaimed sequence; ***fluorogenic*** substrates for fluorometric determination of β-lactamase and use for detection of gene expression and in immunoassay)

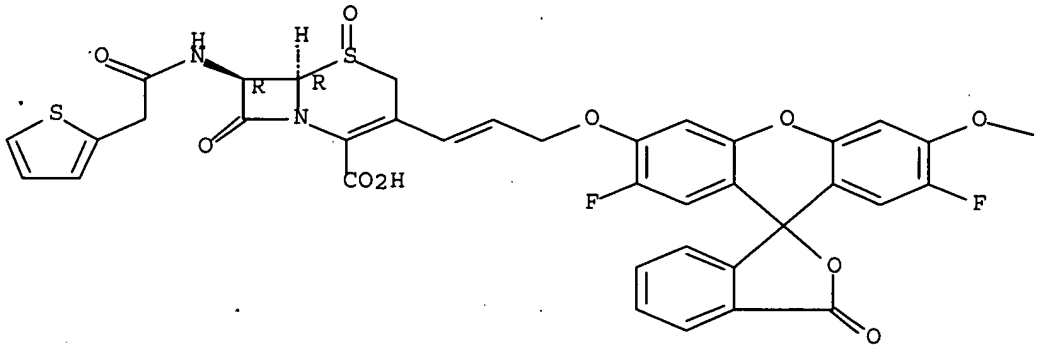
IT ***861670-03-3P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

RN 861670-03-3 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3,3'-[(2',7'-difluoro-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl)bis(oxy-1-propene-3,1-diyl)]bis[8-oxo-7-[(2-thienylacetyl)amino]-, 5,5'-dioxide, (6R,6'R,7R,7'R)- (9CI) (CA INDEX NAME)

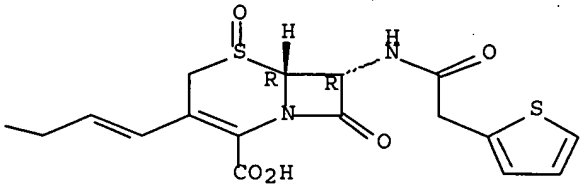
Absolute stereochemistry.

Double bond geometry unknown.

PAGE 1-A



PAGE 1-B



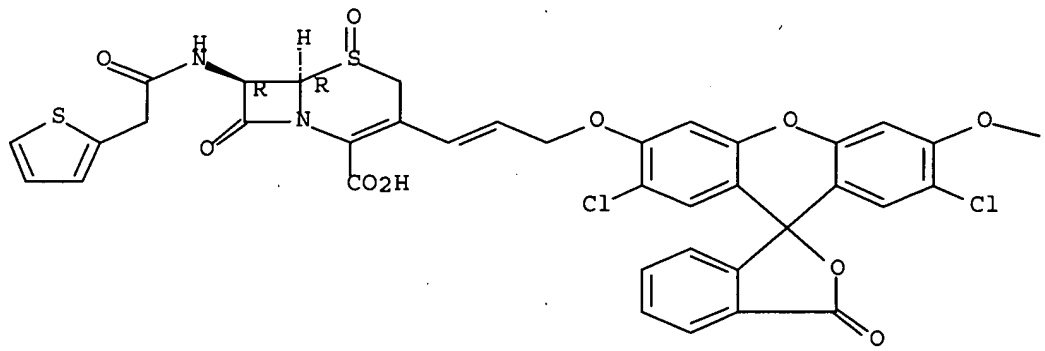
IT *861669-96-7P*
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of ***fluorogenic*** substrates for fluorometric determination of β-lactamase)

RN 861669-96-7 CAPLUS

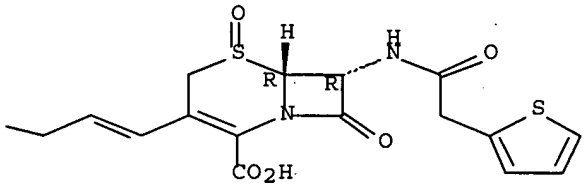
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3,3'-[(2',7'-dichloro-3-oxospiro[isobenzofuran-1(3H),9'-[9H]xanthene]-3',6'-diyl)bis(oxy-1-propene-3,1-diyl)]bis[8-oxo-7-[(2-thienylacetyl)amino]-, 5,5'-dioxide, (6R,6'R,7R,7'R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.

PAGE 1-A



PAGE 1-B



L28 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:571011 CAPLUS Full-text
DOCUMENT NUMBER: 143:93614
TITLE: In vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery
INVENTOR(S): Graham, Ronald J.; Sekar, Michael; Barbisin, Maura
PATENT ASSIGNEE(S): Applera Corporation, USA
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005059163	A2	20050630	WO 2004-US42639	20041215
WO 2005059163	A3	20051229		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,

RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2005244907	A1	20051103	US 2004-14447	20041215
EP 1704244	A2	20060927	EP 2004-814782	20041215

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS

PRIORITY APPLN. INFO.:	US 2003-529953P	P 20031215
	US 2004-542425P	P 20040206
	WO 2004-US42639	W 20041215

AB The present disclosure relates to methods for detecting an activity of one or more enzymes in a cell. In some embodiments, a cell is contacted with a liposome containing a substrate capable of producing a detectable light signal when acted upon by the enzyme, and detecting the amount of a light signal in the cell, wherein the amount indicates a level of the enzyme activity in the cell. Encapsulation in a liposome facilitates intracellular delivery of substrate. The methods can be used in screening agents that can inhibit or activate an enzyme activity. The methods can also be used in various downstream assays such the detection of interactions between intracellular proteins, screening for variants of an enzyme, and detection of various diseases. Compns. and kits for carrying out the various methods are also provided. These results show that liposomes containing a substrate capable of generating a ***fluorescent*** signal when acted on by /-galactosidase can be used to detect activity of this enzyme in cells and can be used to determine the presence or absence of this activity in various cell types.

IC ICM C12Q001-00

CC 9-15 (Biochemical Methods)
Section cross-reference(s): 7

IT ***Dyes***
(FRET pair, substrate comprises; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT ***Fluorescence*** resonance energy transfer
(***dye*** pair, substrate comprises; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT Microscopy
(***epifluorescence***, detecting by; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT Microscopes
(***fluorescence***, detecting by; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT Chemiluminescent substances
Fluorescent indicators
(substrate capable of producing; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT ***Fluorescent*** indicators
(β-galactosidyl substituted, substrate capable of producing; in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

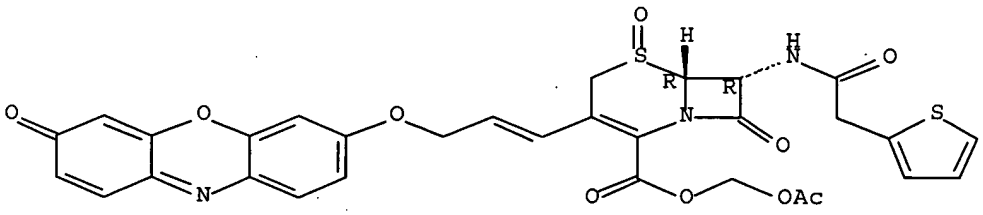
IT 369-07-3, 2-Nitrophenyl β-D-galactopyranoside 6160-78-7, β-Methylumbelliferyl-β-D-galactopyranoside 7240-90-6, 5-Bromo-4-chloro-3-indoyl-β-galactopyranoside 17817-20-8, Fluorescein di-β-D-galactoside 64664-99-9, 3-Carboxyumbelliferyl-β-D-galactopyranoside 95079-19-9, Resorufin β-D-galactopyranoside 147963-17-5, 5-Chloromethylfluorescein di-β-D-galactopyranoside 183736-52-9, 7-[[[[(6-Chloro-7-hydroxy-2-

oxo-2H-1-benzopyran-3-yl)carbonyl]amino]acetyl]amino]-3-[[[3',6'-dihydroxy-3-oxospiro[isobenzofuran- 1-(3H),9'-(9H)xanthen]-5-yl]thio]methyl]-8-oxo (6R,7R)-(9CI) 183736-66-5, 7-[[[[[7-[(Acetyloxy)methoxy]-6-chloro-2-oxo-2H-1-benzopyran-3-yl]carbonyl]amino]acetyl]amino]-3-[[[3',6'-bis(acetyloxy)-3-oxospiro[isobenzofuran- 1-(3H),9'-(9H)xanthen]-5-yl]thio]methyl]-8-oxo- (acetyloxy)methyl ester (6R,7R)-(9CI) 209540-64-7, 5-(Pentafluorobenzoylamino)fluorescein di-β-D-galactopyranoside 215868-26-1, 6,8-Difluoro-4-methylumbelliferyl β-D-galactopyranoside ***452280-31-8*** 503178-95-8, 9H-(1,3-Dichloro-9,9-dimethylacridin-2-on-7-yl) β-D-galactopyranoside 609812-88-6 ***609812-89-7***, 8-Oxo-3-[3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-5-oxide (6R,7R)-(9CI) ***609812-90-0***, 8-Oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-5-oxide (6R,7R)-(9CI)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

IT ***452280-31-8 609812-89-7***, 8-Oxo-3-[3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-5-oxide (6R,7R)-(9CI) ***609812-90-0***, 8-Oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-5-oxide (6R,7R)-(9CI)
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(in vivo assays for enzyme activity using liposome encapsulating chromogenic substrate to facilitate intracellular delivery)

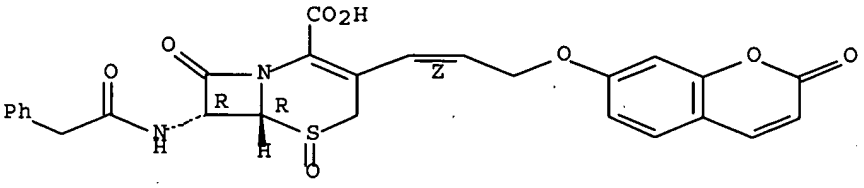
RN 452280-31-8 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, (acetyloxy)methyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



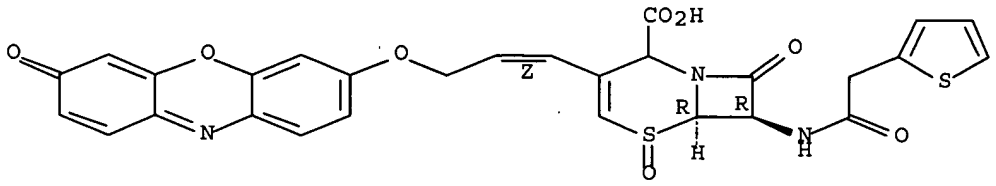
RN 609812-89-7 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



RN 609812-90-0 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

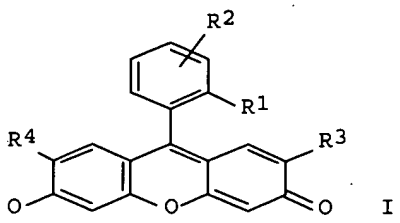
Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:239156 CAPLUS Full-text
DOCUMENT NUMBER: 142:312727
TITLE: ***Fluorescent*** probe used for hydrolase assay
INVENTOR(S): Nagano, Tetsuo; Kamiya, Mako; Urano, Yasuteru
PATENT ASSIGNEE(S): Daiichi Pure Chemicals Co., Ltd., Japan
SOURCE: PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005024049	A1	20050317	WO 2004-JP13185	20040903
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1674579	A1	20060628	EP 2004-772924	20040903
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				

PRIORITY APPLN. INFO.: JP 2003-314041 A 20030905
WO 2004-JP13185 W 20040903
OTHER SOURCE(S): MARPAT 142:312727
GI



I

AB A novel ***fluorescent*** probe is provided, which is represented by the following formula (I), and is utilized for a ***fluorescence*** assay of a hydrolase. In the formula I, R1 represents a hydrogen atom, a carboxy group or a monovalent substituent other than a sulfonate group; R2 represents a hydrogen atom or a monovalent substituent; R3 and R4 each independently represents a hydrogen atom or a halogen atom; and R5 represents a monovalent group which is cleaved upon contact with a substance to be detected; provided that the combination of R1 and R2 is selected so that the benzene ring to which R1 and R2 are bound has such an oxidation potential that (1) the compound I has substantially no ***fluorescence*** before the cleavage; and (2) the resultant compound formed from I by the cleavage is substantially highly ***fluorescent*** after the cleavage.

IC ICM C12Q001-34
ICS G01N021-64; G01N021-78

CC 9-5 (Biochemical Methods)

ST ***fluorescent*** probe oxidn potential bond cleavage hydrolase assay

IT Bond cleavage
Fluorescent indicators
Fluorometry
Hydrolysis
Oxidation potential
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT Electron transfer
(photochem.; ***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT Functional groups
(β-galactopyranosyl, cyclic amide; ***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 9027-41-2, Hydrolase
RL: ANT (Analyte); ANST (Analytical study)
(and carbohydrate-hydrolyzing; ***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 9073-60-3
RL: ANT (Analyte); ANST (Analytical study)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 9001-78-9 9031-11-2, β-Galactosidase
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 847978-23-8P 847978-28-3P 847978-50-1P ***847978-57-8P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 95-46-5, 2-Bromotoluene 96-32-2, Methylbromoacetate 603-35-0, Triphenylphosphine, reactions 814-49-3, Diethylchlorophosphate 937-14-4, m-Chloroperbenzoic acid 1214-24-0 7252-83-7, 2-Bromo-1,1-dimethoxyethane 7681-82-5, Sodiumiodide, reactions 14472-14-1, 4-Bromo-3-methylphenol 16029-98-4, Iodotrimethylsilane 18162-48-6, tert-Butyldimethylsilylchloride 19285-38-2 104146-10-3 121714-18-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 590-97-6P 5454-83-1P 119636-62-3P 169315-83-7P 643755-80-0P 643755-81-1P 643755-82-2P 643755-83-3P 643755-84-4P 643755-85-5P 643755-86-6P 643755-87-7P 847978-25-0P 847978-34-1P 847978-36-3P 847978-38-5P 847978-45-4P 847978-47-6P 847978-52-3P 847978-54-5P 847978-55-6P ***847978-56-7P***
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

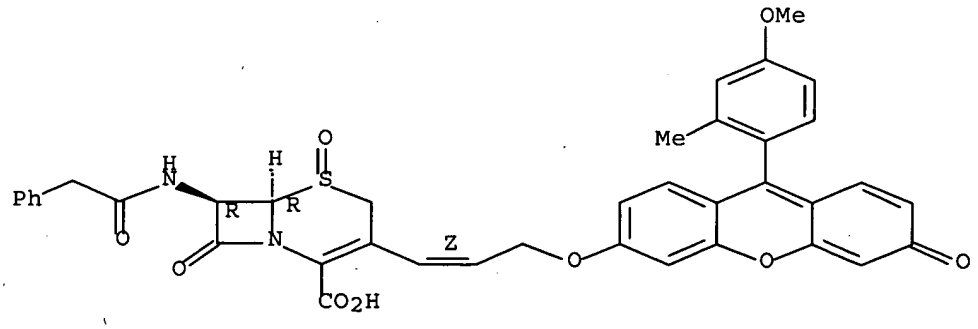
IT 847978-41-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT 9013-79-0, Esterase
RL: ANT (Analyte); ANST (Analytical study)
(phosphoric acid ester; ***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

IT ***847978-57-8P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

RN 847978-57-8 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(1Z)-3-[[9-(4-methoxy-2-methylphenyl)-3-oxo-3H-xanthen-6-yl]oxy]-1-propenyl]-8-oxo-7-[(phenylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



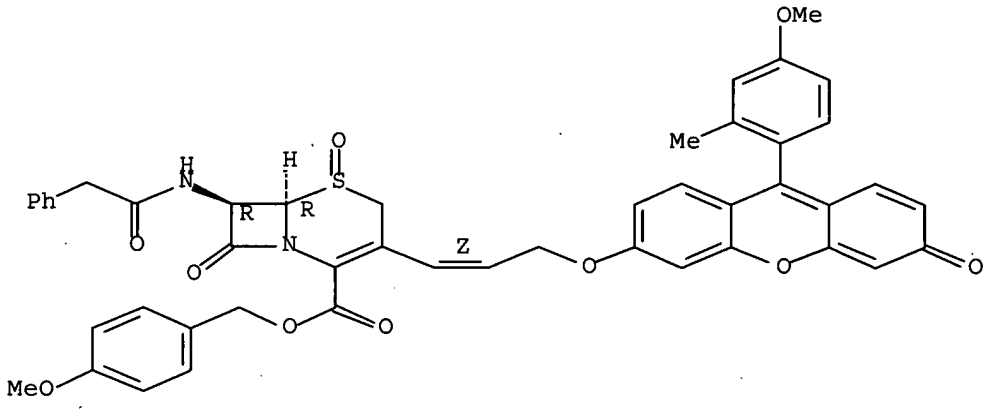
IT ***847978-56-7P***

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(***fluorescent*** probe capable of generating ***fluorescence*** upon bond cleavage in hydrolase assay)

RN 847978-56-7 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(1Z)-3-[[9-(4-methoxy-2-methylphenyl)-3-oxo-3H-xanthen-6-yl]oxy]-1-propenyl]-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:878473 CAPLUS Full-text

DOCUMENT NUMBER: 141:389858

TITLE: reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates

INVENTOR(S): Xie, X. Sunney; Xiao, Jie; Cai, Long; Markson, Joseph Scott; Yu, Ji; Yin, Jlalu

PATENT ASSIGNEE(S): President and Fellows of Harvard College, USA; Regents of the University of California

SOURCE: PCT Int. Appl., 69 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004090104	A2	20041021	WO 2004-US10341	20040402
WO 2004090104	A3	20050303		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1616032 A2 20060118 EP 2004-749716 20040402
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR

PRIORITY APPLN. INFO.: US 2003-459897P P 20030402
WO 2004-US10341 W 20040402

AB The current invention provides a reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates. Modified β-galactosidase, β-glucosidase, β-lactamase with short maturation time and a short cellular lifetime are selected as reporter to detect transient gene expression event in live cells. Gene expression signals are monitored by visible and UV spectrometry, and fluorometry.

IC ICM C12N

CC 3-3 (Biochemical Genetics)
Section cross-reference(s): 7, 10

ST sequence Escherichia ubiquitin beta galactosidase lacZ; yellow ***fluorescent*** protein gene sequence; live cell gene expression reporting system

IT DNA sequences
(for modified ubiquitin fusion β-galactosidase (E. coli) lacZ and yellow ***fluorescent*** protein gene)

IT Protein sequences
(for modified ubiquitin fusion β-galactosidase (Escherichia coli) and yellow ***fluorescent*** protein)

IT Escherichia coli
Saccharomyces cerevisiae
Shewanella oneidensis
(gene expression at; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT Gene, microbial
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(lacZ; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT Fluorometry
UV and visible spectroscopy
(reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT Gene, animal
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(ssrA; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(yellow ***fluorescent***; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 183736-52-9, CCF 2
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(CCF 2; reporting system for monitoring real-time gene expression

events in live cells using ***fluorogenic*** substrates)

IT ***452280-30-7***, CR 2
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(CR 2; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 784214-83-1
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 776338-24-0 776338-26-2 776338-28-4 784214-78-4 784214-80-8 784214-82-0
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(amino acid sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 776338-29-5, DNA (plasmid pVS5 gene Venus-ssrA)
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleotide sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 776338-23-9 776338-25-1 776338-27-3 784214-77-3 784214-79-5 784214-81-9
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleotide sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 60267-61-0, Ubiquitin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(reporter protein fusion with; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 9001-22-3, β-Glucosidase 9031-11-2, β-Galactosidase 9073-60-3, β-Lactamase
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(reporter; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 776318-68-4
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(ssrA peptide sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 95079-19-9 101490-85-1 503178-95-8 776318-69-5
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(substrate; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT 776782-40-2 776782-41-3 776782-42-4 776782-43-5 776782-44-6 776782-45-7
RL: PRP (Properties)
(unclaimed nucleotide sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

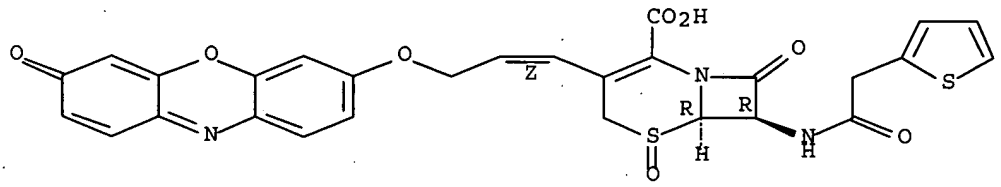
IT 776782-46-8 776782-47-9 776782-48-0 776782-49-1 776782-50-4
776782-51-5
RL: PRP (Properties)
(unclaimed sequence; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

IT ***452280-30-7***, CR 2
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(CR 2; reporting system for monitoring real-time gene expression events in live cells using ***fluorogenic*** substrates)

RN 452280-30-7 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:643607 CAPLUS Full-text

DOCUMENT NUMBER: 139:287990

TITLE: Novel ***Fluorogenic*** Substrates for Imaging β-Lactamase Gene Expression

AUTHOR(S): Gao, Wenzhong; Xing, Bengang; Tsien, Roger Y.; Rao, Jianghong

CORPORATE SOURCE: Department of Molecular and Medical Pharmacology, Crump Institute for Molecular Imaging, University of California, Los Angeles, CA, 90095-1770, USA

SOURCE: Journal of the American Chemical Society (2003), 125(37), 11146-11147
CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 139:287990

AB A new class of small ***nonfluorescent fluorogenic*** substrates, based on release of a phenolic ***dye*** from a vinylogous cephalosporin, becomes brightly ***fluorescent*** after β-lactamase hydrolysis with up to 153-fold enhancement in the ***fluorescence*** intensity. Less than 500 fM of β-lactamase in cell lysates can be readily detected, and β-lactamase expression in living cells can be imaged with a red ***fluorescence*** derivative These new ***fluorogenic*** substrates should find uses in clin. diagnostics and facilitate the applications of β-lactamase as a biosensor.

CC 7-1 (Enzymes)
Section cross-reference(s): 26

ST vinylogous cephalosporin prepn ***fluorogenic*** imaging lactamase detection

IT 9073-60-3, β-Lactamase

RL: ANT (Analyte); ANST (Analytical study)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

IT 609812-88-6P ***609812-89-7P 609812-90-0P 609812-91-1P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

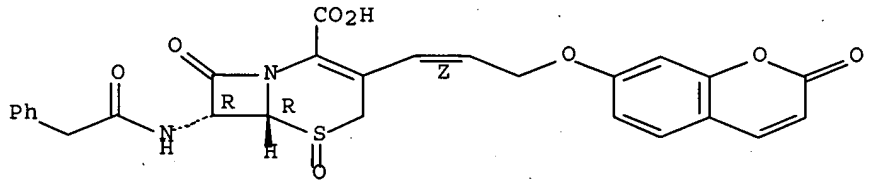
IT 93-35-6, 7-Hydroxycoumarin 7252-83-7 34994-50-8, Resorufin sodium salt 39098-97-0, 2-Thiopheneacetyl chloride 64308-63-0 79349-53-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

IT 704884-54-8 16851-02-8P 26748-89-0P 33748-22-0P 70752-63-5P 107550-89-0P 609812-77-3P ***609812-78-4P*** 609812-79-5P 609812-80-8P 609812-81-9P ***609812-82-0P*** 609812-83-1P 609812-84-2P ***609812-85-3P*** 609812-86-4P 609812-87-5P
RL: RCT (Reactant); SPN (Synthetic preparation)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

IT ***609812-89-7P 609812-90-0P 609812-91-1P***
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

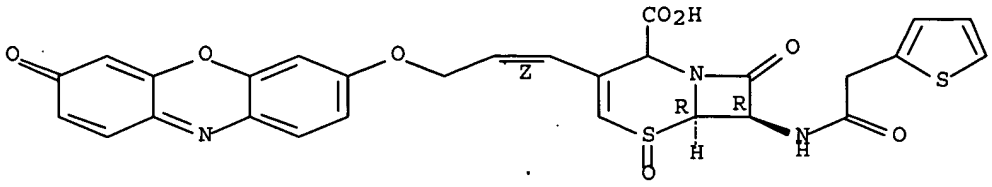
RN 609812-89-7 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



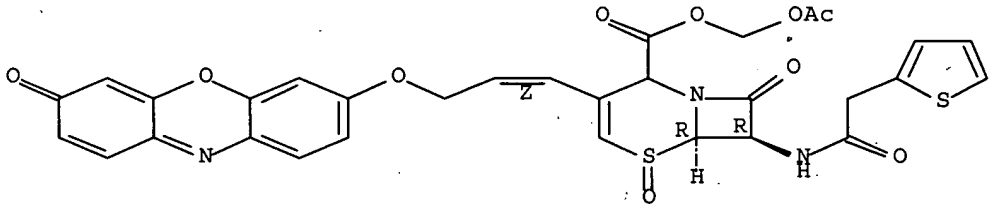
RN 609812-90-0 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



RN 609812-91-1 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, (acetyloxy)methyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

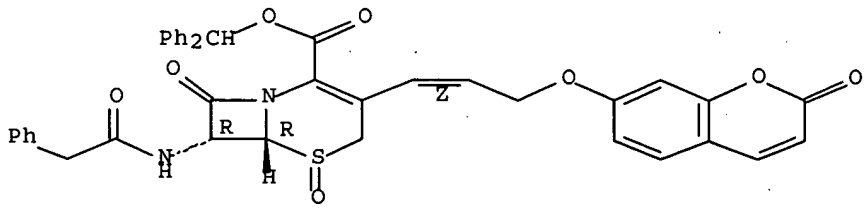
Absolute stereochemistry.
Double bond geometry as shown.



IT ***609812-78-4P 609812-82-0P 609812-85-3P***
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of vinylogous cephalosporin ***fluorogenic*** substrates and use for detection of β-lactamase)

RN 609812-78-4 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(2-oxo-2H-1-benzopyran-7-yl)oxy]-1-propenyl]-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

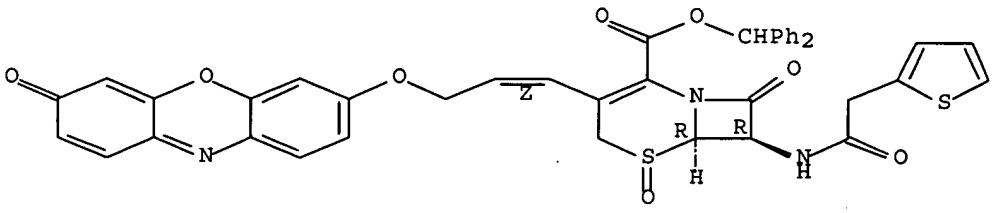
Absolute stereochemistry.
Double bond geometry as shown.



RN 609812-82-0 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-

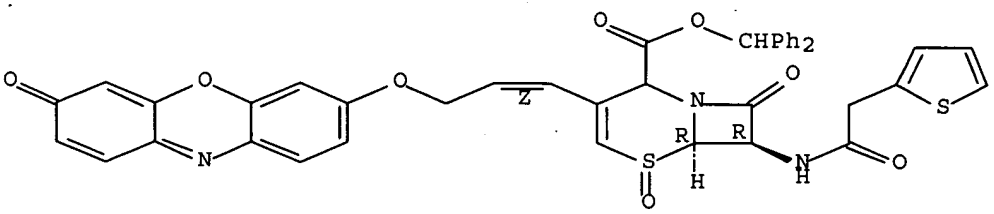
thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



RN 609812-85-3 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-3-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L28 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:676218 CAPLUS Full-text
DOCUMENT NUMBER: 137:197525
TITLE: β-Lactamase substrates having phenolic ethers and their use for β-lactamase determination
INVENTOR(S): Tsien, Roger Y.; Rao, Jianghong
PATENT ASSIGNEE(S): The Regents of the University of California, USA
SOURCE: PCT Int. Appl., 46 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002068678	A2	20020906	WO 2002-US769	20020111
WO 2002068678	A3	20031204		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,

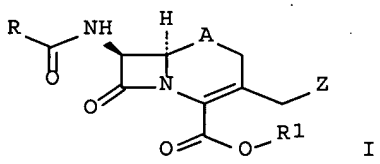
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2434679	AA	20020906	CA 2002-2434679		20020111
EP 1385853	A2	20040204	EP 2002-720779		20020111
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
JP 2005501806	T2	20050120	JP 2002-568772		20020111
PRIORITY APPLN. INFO.:			US 2001-261313P	P	20010112
			WO 2002-US769	W	20020111

OTHER SOURCE(S): MARPAT 137:197525

GI



I

AB Provided are ***fluorescent*** β-lactamase substrates I (R = benzyl, 2-thienylmethyl, cyanomethyl; R1 = H, physiol. acceptable salts or metal, ester groups, ammonium cations, --CHR2OCO(CH2)nCH3, --CHR2OCOC(CH3)3, acylthiomethyl, acyloxy-α-benzyl, δ-butyrolactonyl, methoxycarbonyloxymethyl, Ph, methylsulphinylmethyl, β-morpholinoethyl, dialkylaminoethyl, dislkylaminocarbonyloxymethyl; R2 = H, lower alkyl; A = S, O, SO, SO2, CH2; Z = a donor ***fluorescent*** moiety). Also provided are methods of use of these compds. for β-lactamase determination

IC ICM C12Q

CC 7-3 (Enzymes)

IT 452280-29-4P ***452280-30-7P 452280-31-8P 452280-32-9P***

RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(β-Lactamase substrates having phenolic ethers and their use for β-lactamase determination)

IT ***452280-30-7P 452280-31-8P 452280-32-9P***

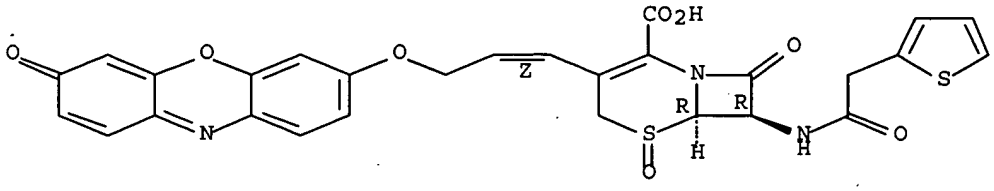
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)

(β-Lactamase substrates having phenolic ethers and their use for β-lactamase determination)

RN 452280-30-7 CAPLUS

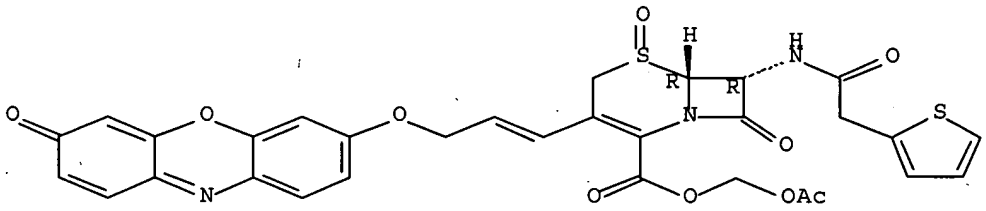
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[(1Z)-3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



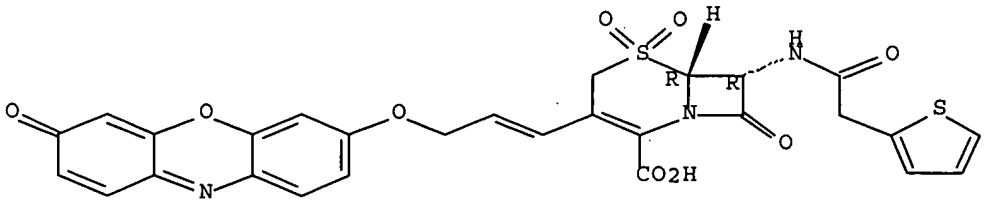
RN 452280-31-8 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, (acetyloxy)methyl ester, 5-oxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



RN 452280-32-9 CAPLUS
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-[3-[(3-oxo-3H-phenoxazin-7-yl)oxy]-1-propenyl]-7-[(2-thienylacetyl)amino]-, 5,5-dioxide, (6R,7R)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry unknown.



L28 ANSWER 8 OF 13 USPATFULL on STN
ACCESSION NUMBER: 81:6597 USPATFULL Full-text
TITLE: Cephem carbonylmethyl derivatives

INVENTOR(S): Scartazzini, Riccardo, Allschwil, Switzerland
Bickel, Hans, Binningen, Switzerland
PATENT ASSIGNEE(S): Ciba-Geigy Corporation, Ardsley, NY, United States
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4248868		19810203
APPLICATION INFO.:	US 1979-14454		19790223 (6)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1976-715084, filed on 17 Aug 1976, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	CH 1975-10904	19750822

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Rizzo, Nicholas S.
LEGAL REPRESENTATIVE: Almaula, Prabodh I.
NUMBER OF CLAIMS: 23
EXEMPLARY CLAIM: 1
LINE COUNT: 2607
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention comprises carbonylmethyl derivatives of the formula IA and corresponding carbonylmethylene derivatives of the formula IB ##STR1## in which R.sub.1.sup.a represents a member of the group comrising hydrogen and an acyl radical of the formula A

R.sub.a --C(R.sub.b)(R.sub.c)--C(.dbd.O)-- (A)

in which R.sub.a represents a member of the group comprising optionally substituted phenyl, thienyl, furyl, cyclohexadienyl and cyclohexenyl, R.sub.b represents hydrogen and R.sub.c represents a member of the group comprising hydrogen, optionally protected hydroxyl, optionally protected amino and phenyl-lower protected sulpho, or in which R.sub.a represents a member of the group comprising cyano, optionally substituted phenoxy, pyridylthio, and tetrazolyl, and R.sub.b and R.sub.c each represent hydrogen, or in which R.sub.a represents a member of the group comprising phenyl, thienyl, furyl, and R.sub.b and R.sub.c together denote a member of the group comprising lower alkoxyimino, cycloalkoxyimino and phenyl-lower alkoxyimino in the syn-configuration, and such a group of the formula (A) contains at most one free amino group, R.sub.1.sup.b represents hydrogen, R.sub.2 represents a member of the group comprising hydroxyl, α-poly-branched lower alkoxy and 2-halogeno-lower alkoxy, which can easily be converted into the latter, and also phenacyloxy, 1-phenyl-lower alkoxy which has 1-3 phenyl radicals which are optionally substituted by lower alkoxy or nitro, lower alkanoyloxymethoxy, α-amino-lower alkanoyloxymethoxy, or 2-phthalidyloxy, and also tris-lower alkylsilyloxy, and R.sub.3 represents a member of the group comprising hydrogen, lower alkyl, cycloalkyl, phenyl which is optionally substituted by lower alkyl, lower alkoxy or halogen, phenyllower alkyl which is optionally substituted by nitro, lower alkyl, lower alkoxy or halogen, hydroxyl, etherified hydroxyl, especially lower alkoxy, above all methoxy, amino, lower alkylamino, di-lower alkylamino, lower alkyleneamino, oxa-lower alkylenamino, phenylamino, hydroxylamino, lower alkoxyamino, hydrazino, 2-lower alkylhydrazino, 2-phenylhydrazino, 4-lower alkylpiperazin-1- ylamino, lower alkylamino which is substituted by amino and/or carboxyl, and heterocyclylamino which is optionally substituted by lower alkyl, and wherein the heterocyclyl radical preferably contains 5-6

rings members and contains, as hetero-atoms, nitrogen, which is optionally also in the N-oxidized form, oxygen or sulphur and 1-oxides and salts of such compounds, which compounds are active against microorganisms, such as Gram-positive and Gram-negative bacteria, and pharmaceutical preparations containing these compounds.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . agents, for example starches, agar, alginic acid or a salt thereof, such as sodium alginate, and/or effervescent mixtures, or adsorbents, ***dyestuffs***, flavouring substances and sweeteners. Furthermore, the new pharmacologically active compounds can be used in the form of injectable formulations, for. . .

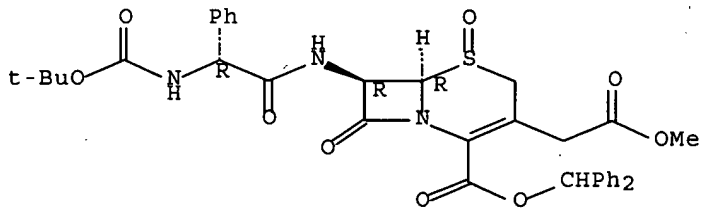
IT ***63760-38-3P 63760-42-9P 63760-50-9P***
63760-68-9P
(preparation and reduction of)

IT ***63760-38-3P 63760-42-9P 63760-50-9P***
(preparation and reduction of)

RN 63760-38-3 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-3-acetic acid, 7-[[[[(1,1-dimethylethoxy)carbonyl]amino]phenylacetyl]amino]-2-[(diphenylmethoxy)carbonyl]-8-oxo-, methyl ester, 5-oxide, [6R-[6α,7β(R*)]]- (9CI) (CA INDEX NAME)

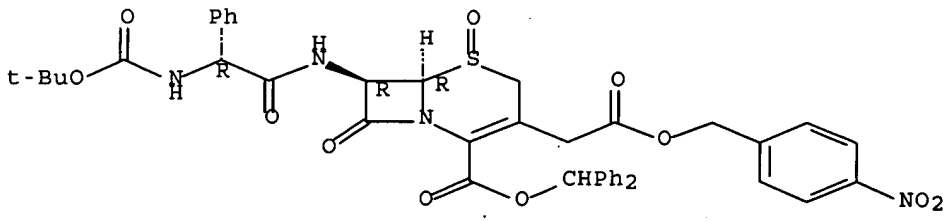
Absolute stereochemistry.



RN 63760-42-9 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-3-acetic acid, 7-[[[[(1,1-dimethylethoxy)carbonyl]amino]phenylacetyl]amino]-2-[(diphenylmethoxy)carbonyl]-8-oxo-, (4-nitrophenyl)methyl ester, 5-oxide, [6R-[6α,7β(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

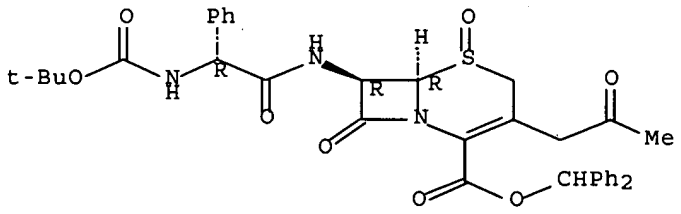


RN 63760-50-9 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[(1,1-dimethylethoxy)carbonyl]amino]phenylacetyl]amino]-8-oxo-3-(2-

oxopropyl)-, diphenylmethyl ester, 5-oxide, [6R-[6α,7β(R*)]]-
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



L28 ANSWER 9 OF 13 USPATFULL on STN

ACCESSION NUMBER:	78:50766 USPATFULL Full-text
TITLE:	Preparation of cephalosporin compounds
INVENTOR(S):	Laundon, Brian, Northolt, Great Britain Cowley, Brian Richard, Greenford, Great Britain Humber, David Cedric, London, Great Britain
PATENT ASSIGNEE(S):	Glaxo Laboratories Limited, Greenford, Great Britain (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4113591		19780912
APPLICATION INFO.:	US 1976-749300		19761210 (5)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1975-593273, filed on 7 Jul 1975, now abandoned which is a continuation of Ser. No. US 1974-455073, filed on 27 Mar 1974, now abandoned which is a continuation of Ser. No. US 1972-306308, filed on 14 Nov 1972, now abandoned which is a division of Ser. No. US 1970-66128, filed on 21 Aug 1970, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1969-42502	19690826
	GB 1970-14980	19700326
	GB 1970-3463	19700123
	GB 1970-33698	19700710

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Williams, Howard S.
LEGAL REPRESENTATIVE:	Bacon & Thomas
NUMBER OF CLAIMS:	4
EXEMPLARY CLAIM:	1
LINE COUNT:	4100

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to a novel method for the preparation of a 7β-acylamido-3-bromomethylceph-3-em-4-carboxylic acid-1-oxide compound by brominating a 7β-acylamido-3-methylceph-3-em-4- carboxylic acid-1-oxide compound.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD . . . 20 mmole) in dry, ethanol-free chloroform (300 ml.) was heated to reflux in an atmosphere of nitrogen, and illuminated by ***fluorescent*** strip-lighting (8 + 40-watt lamps). N-Bromosuccinimide (890 mg., 5 mmole) was added and the mixture refluxed for 13/4hr., further portions. . .

DETD . . . 10.4 mmole) in benzene (500 ml.) was stirred and heated to reflux in an atmosphere of nitrogen, and illuminated with ***fluorescent*** striplighting (8 + 40-watt lamps). N-Bromosuccinimide (3 g., 16.85 mmole) was added and the mixture refluxed for 30 minutes, then. . .

DETD . . . heated under reflux for 1 hour in a stream of dry nitrogen while being illuminated by 8 + 40 watt ***fluorescent*** strip-lights. The reaction mixture was filtered from a trace of insoluble material and the benzene was evaporated. The residue was. . .

DETD . . . heated under reflux for 1 hour in a stream of dry nitrogen while being illuminated by 8 + 40 watt ***fluorescent*** strip-lights. The benzene was removed in vacuo and the residual orange foam was chromatographed on Kieselgel G (150 g) with. . .

IT 50-59-9P 58-71-9P 5317-29-3P 24689-52-9P 25164-09-4P
26382-85-4P 26722-88-3P 26805-12-9P 33247-52-8P 33247-53-9P
33247-54-0P 33247-55-1P 33247-56-2P 33465-36-0P 33465-37-1P
33465-38-2P 33465-39-3P 33465-40-6P 33465-41-7P 33465-42-8P
33465-43-9P 33465-45-1P 33465-46-2P 33465-47-3P 33465-48-4P
33465-49-5P 33465-50-8P 33465-51-9P 33465-52-0P 33465-53-1P
33465-54-2P 33465-55-3P 33465-56-4P 33465-57-5P 33465-58-6P
33465-59-7P 33465-60-0P 33465-61-1P 33465-62-2P 33465-63-3P
33465-64-4P 33492-77-2P 33492-78-3P 33492-80-7P 33492-81-8P
33492-82-9P 33492-83-0P 33492-84-1P 33492-86-3P 33492-87-4P
33492-88-5P ***33492-89-6P*** 33492-90-9P ***33492-91-0P***
33492-92-1P ***33492-93-2P*** ***33492-94-3P*** 33492-95-4P
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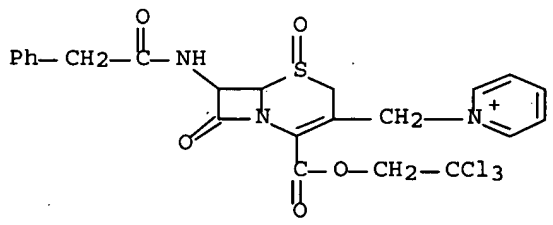
33493-03-7P 33493-04-8P 33493-05-9P 33493-07-1P 33493-08-2P
33493-09-3P 33493-10-6P 33493-11-7P 33493-13-9P 33493-14-0P
33493-15-1P 33493-16-2P 33493-17-3P 33493-18-4P 33513-04-1P
33602-17-4P 33602-18-5P 33610-06-9P 33610-07-0P 33610-08-1P
33610-09-2P 33610-10-5P 33610-11-6P 33610-12-7P 33610-13-8P
33710-48-4P 33710-49-5P
(preparation of)

IT ***33492-89-6P*** ***33492-91-0P*** ***33492-93-2P***
33492-94-3P
(preparation of)

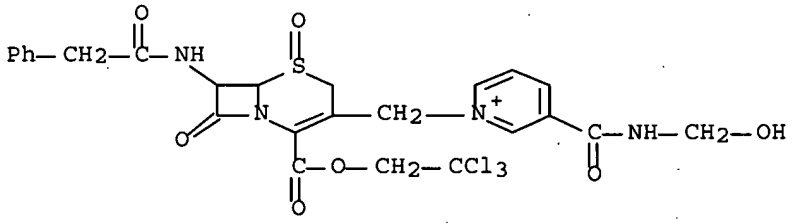
RN 33492-89-6 USPATFULL

CN Pyridinium, 1-[[2-carboxy-8-oxo-7-(2-phenylacetamido)-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, bromide, 2,2,2-trichloroethyl ester, S-oxide, stereoisomer (8CI) (CA INDEX NAME)

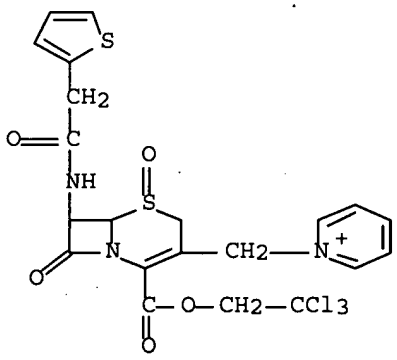


● Br⁻

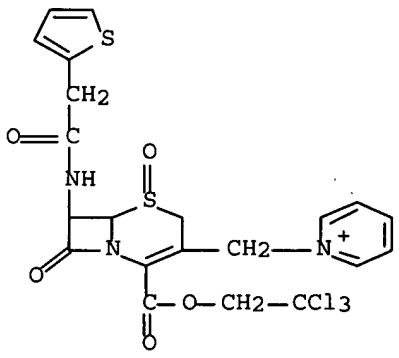
RN 33492-91-0 USPATFULL
CN Pyridinium, 1-[[2-carboxy-8-oxo-7-(2-phenylacetamido)-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-3-[(hydroxymethyl)carbamoyl]-, bromide, 2,2,2-trichloroethyl ester, S-oxide, stereoisomer (8CI) (CA INDEX NAME)



RN 33492-93-2 USPATFULL
CN Pyridinium, 1-[[2-carboxy-8-oxo-7-[2-(2-thienyl)acetamido]-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, bromide, 2,2,2-trichloroethyl ester, 5-oxide, stereoisomer (8CI) (CA INDEX NAME)



RN 33492-94-3 USPATFULL
CN Pyridinium, 1-[[5-oxido-8-oxo-7-[(2-thienylacetyl)amino]-2-[(2,2,2-trichloroethoxy)carbonyl]-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, chloride, [5S-(5α,6β,7α)]- (9CI) (CA INDEX NAME)



L28 ANSWER 10 OF 13 USPATFULL on STN

ACCESSION NUMBER:	78:47489 USPATFULL Full-text
TITLE:	Process for the preparation of 3-vinyl and substituted vinyl cephalosporins
INVENTOR(S):	Clark, John C., Gerrards Cross, Great Britain Kennedy, James, Angus, Great Britain Long, Alan G., Greenford, Great Britain Weir, Niall G., London, Great Britain
PATENT ASSIGNEE(S):	Glaxo Laboratories Limited, Greenford, Great Britain (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4110534		19780829
APPLICATION INFO.:	US 1976-679073		19760421 (5)

RELATED APPLN. INFO.: Division of Ser. No. US 1974-486633, filed on 8 Jul 1974, now Defensive Publication No. which is a continuation of Ser. No. US 1971-108136, filed on 20 Jan 1971, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1970-3464	19700123
	GB 1970-21907	19700123
	GB 1970-28194	19700123

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Rizzo, Nicholas S.
LEGAL REPRESENTATIVE:	Bacon & Thomas
NUMBER OF CLAIMS:	10
EXEMPLARY CLAIM:	1
LINE COUNT:	3342

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention is concerned with the preparation of Δ.sup.3 -4-carboxy cephalosporin antibiotics possessing a 3-vinyl group or substituted 3-vinyl group by means of phosphorous intermediates.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . by thin layer chromatography and by ultra-violet spectroscopy (in general, the λ.sub.max shifts to higher wavelengths as the reaction produces ***chromophoric*** groups). Disappearance of the 3-formyl group is complete when no fraction on the chromatograms goes red or orange with 2,4-dinitrophenylhydrazone.

DETD Treatment of this material in ethanol solution with ethoxycarbonylmethylenetriphenylphosphorane (pKa 8.95) gave no ***chromophore*** at 388 nm corresponding to the phosphorane derived from the title compound. However, treatment with carbamoylmethylenetriphenylphosphorane (pKa 11) gave the ***chromophore*** at 388 nm, corresponding to the phosphorane (pKa values in 80%-aqueous ethanol determined by S. Fliszar, R. F. Hudson and. . .

DETD . . . (2 ml.) and 5% aqueous sodium bicarbonate solution (5 ml.) and the mixture stirred vigorously at room temperature until the ***chromophore*** of the starting material at 388 nm. had disappeared (ca. 30 minutes). The organic layer was separated and washed with. . .

IT 153-61-7P 5935-65-9P 29126-13-4P 33741-78-5P 33741-79-6P
33741-80-9P 33741-81-0P 33741-82-1P 33741-83-2P 33741-85-4P
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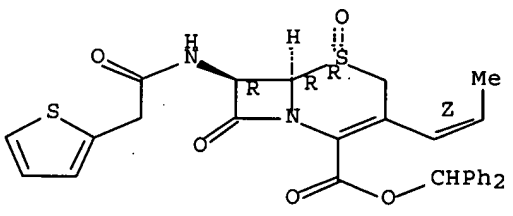
34712-49-7P
(preparation of)

IT ***33747-84-1P***
(preparation of)

RN 33747-84-1 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-(1-propenyl)-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [5R-[3(Z),5α,6α,7β]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 11 OF 13 USPATFULL on STN

ACCESSION NUMBER: 78:44172 USPATFULL Full-text

TITLE: Δ.sup.3 -3-Vinyl or substituted vinyl-4-carboxy cephalosporins

INVENTOR(S): Clark, John Colin, Gerrards Cross, England
Kennedy, James, Angus, Scotland
Long, Alan Gibson, Greenford, England
Weir, Niall Galbraith, London, England

PATENT ASSIGNEE(S): Glaxo Laboratories Limited, Greenford, England (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 4107431		19780815
APPLICATION INFO.:	US 1974-486633		19740708 (5)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1971-108136, filed on 20 Jan 1971, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1970-3436	19700123

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Tovar, Jose
LEGAL REPRESENTATIVE: Bacon & Thomas
NUMBER OF CLAIMS: 13
EXEMPLARY CLAIM: 1
LINE COUNT: 3289
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention is concerned with Δ.sup.3 -4-carboxy cephalosporin antibiotics possessing a 3-vinyl or substituted 3-vinyl groups as well as with phosphorous intermediates useful in the preparation thereof.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

SUMM . . . by thin layer chromatography and by ultra-violet spectroscopy (in general, the λmax shifts to higher wavelengths as the reaction produces ***chromophoric*** groups). Disappearance of the 3-formyl group is complete when no fraction on the chromatograms goes red or orange with 2,4-dinitrophenylhydrazone.

DETD Treatment of this material in ethanol solution with ethoxycarbonylmethylenetriphenylphosphorane (pKa 8.95) gave no ***chromophore*** at 388 nm corresponding to the phosphorane derived from the title compound. However, treatment with carbamoylmethylenetriphenylphosphorane (pKa 11) gave the ***chromophore*** at 388 nm, corresponding to the phosphorane (pKa values in 80%-aqueous ethanol determined by S. Fliszar, R. F. Hudson and. . .

DETD . . . (2 ml.) and 5% aqueous sodium bicarbonate solution (5 ml.) and the mixture stirred vigorously at room temperature until the ***chromophore*** of the starting material at 388 nm. had disappeared (ca. 30 minutes). The organic layer was separated and washed with. . .

IT 979-94-2P 30200-18-1P 33741-83-2P 33741-85-4P 33741-87-6P
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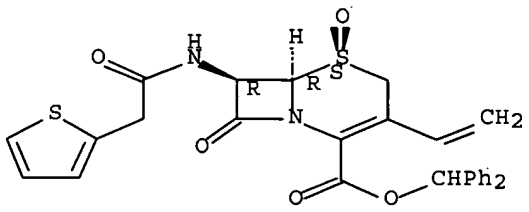
69166-27-4P 69166-28-5P 69166-30-9P 69223-01-4P
(preparation of)

IT ***69166-19-4P 69166-20-7P***
(preparation of)

RN 69166-19-4 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-ethenyl-8-oxo-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [5S-(5α,6β,7α)]- (9CI) (CA INDEX NAME)

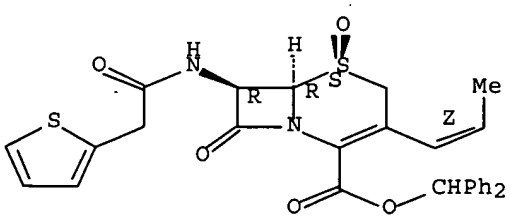
Absolute stereochemistry.



RN 69166-20-7 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-(1-propenyl)-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [5S-[3(Z),5α,6β,7α]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 12 OF 13 USPATFULL on STN

ACCESSION NUMBER: 76:64940 USPATFULL Full-text

TITLE: 3-Vinyl-7β-(2,2-disubstituted acetamido)-cephalosporins

INVENTOR(S): Weir, Niall Galbraith, London, England

PATENT ASSIGNEE(S): Glaxo Laboratories Limited, Greenford, England (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 3994884		19761130
APPLICATION INFO.:	US 1974-440753		19740208 (5)

RELATED APPLN. INFO.: Continuation of Ser. No. US 1971-108134, filed on 20 Jan 1971, now abandoned

	NUMBER	DATE
PRIORITY INFORMATION:	GB 1970-28194	19700610
	GB 1971-346470	19710112
	GB 1971-2190770	19710112

DOCUMENT TYPE: Utility
FILE SEGMENT: Granted
PRIMARY EXAMINER: Rizzo, Nicholas S.
LEGAL REPRESENTATIVE: Bacon & Thomas
NUMBER OF CLAIMS: 5
EXEMPLARY CLAIM: 1
LINE COUNT: 1705
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention is concerned with Δ.sup.3 -4-carboxy cephalosporin antibiotics possessing a 3-vinyl group and having 2,2-disubstituted acetamido group at the 7-position.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD Treatment of this material in ethanol solution with ethoxycarbonylmethylenetriphenylphosphorane (pKa 8.95) gave no ***chromophore*** at 388 nm corresponding to the phosphorane derived from the title compound. However, treatment with carbamoylmethylenetriphenylphosphorane (pKa 11) gave the ***chromophore*** at 388 nm, corresponding to the phosphorane (pKa values in 80%-aqueous ethanol determined by S. Fliszar, R. F. Hudson and. . .

IT 153-61-7P 5935-65-9P 29126-13-4P 33741-78-5P 33741-79-6P
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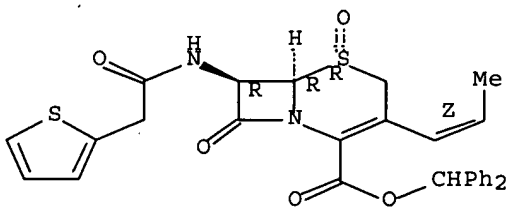
33748-54-8P 33748-55-9P 33748-56-0P 33748-57-1P 33748-58-2P
34712-49-7P
(preparation of)

IT ***33747-84-1P***
(preparation of)

RN 33747-84-1 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-(1-propenyl)-7-[(2-thienylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [5R-[3(Z),5α,6α,7β]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.
Double bond geometry as shown.



L28 ANSWER 13 OF 13 USPATFULL on STN

ACCESSION NUMBER:	76:2206 USPATFULL Full-text
TITLE:	3-R-methyl-7-amino-ceph-em-4-carboxylic acid compounds
INVENTOR(S):	Peter, Heinrich, Riehen, Switzerland Rodriguez, Herman Robert, New York, NY, United States Bickel, Hans, Binningen, Switzerland
PATENT ASSIGNEE(S):	Ciba-Geigy Corporation, Ardsley, NY, United States (U.S. corporation)

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 3932465		19760113	
APPLICATION INFO.:	US 1971-159527		19710702	(5)

	NUMBER	DATE
PRIORITY INFORMATION:	CH 1970-10305	19700708

DOCUMENT TYPE:	Utility
FILE SEGMENT:	Granted
PRIMARY EXAMINER:	Rizzo, Nicholas S.
LEGAL REPRESENTATIVE:	Kolodny, Joseph G., Maitner, John J., Groeger, Theodore O.
NUMBER OF CLAIMS:	10
EXEMPLARY CLAIM:	1
LINE COUNT:	4827

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB 3-R-Methyl-7-amino-ceph-2-em-4ξ-carboxylic acid compounds, in which R is the C-residue of a C-nucleophilic compound are valuable intermediates, for example, in the manufacture of the corresponding 3-R-methyl-7-amino-ceph-3-em-4-carboxylic acid compounds with antibiotic properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

DETD . . . 164°-164.5° (with decomp.; uncorr.); [α].sub.D.sup.20 = 198° ± 1° (c = 1.007 in dioxane); thin-layer chromatogram (silica gel, plates with ***fluorescence*** indicator; detection with ultraviolet light λ = 254 mμ and iodine vapour): Rf = 0.72 (system:n-butanol/acetic acid/water 75:7.5:21), Rf =. . .

DETD . . . at 174.5°-176° (with decomposition) after drying

15 hours under a high vacuum at 35°; thin-layer chromatogram (silica gel; plates with ***fluorescence*** indicator; detection with ultraviolet light λ = 254 mμ and iodine vapour): Rf = 0.71 (system: n-butanol/acetic acid/water 75:7.5:21), Rf. . .

DETD . . . over anhydrous magnesium sulphate and evaporated under reduced pressure. The residue is placed onto preparative thin-layer plates (silica gel, with ***fluorescence*** indicator). The plates are developed during approximately 5 hours in the system n-butanol/glacial acetic acid/water (44:12:44). After drying, the main. . .

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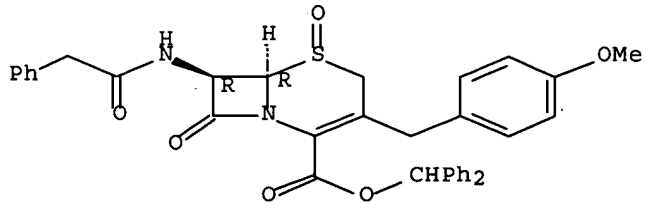
36474-56-3P 36474-57-4P ***36488-97-8P*** 36614-16-1P
(preparation of)

IT ***36242-73-6P 36242-74-7P 36242-75-8P***
36242-76-9P 36242-77-0P 36242-78-1P
36242-79-2P 36242-80-5P 36242-81-6P
36242-82-7P 36406-59-4P 36406-60-7P
36406-61-8P 36488-97-8P
(preparation of)

RN 36242-73-6 USPATFULL

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(4-methoxyphenyl)methyl]-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

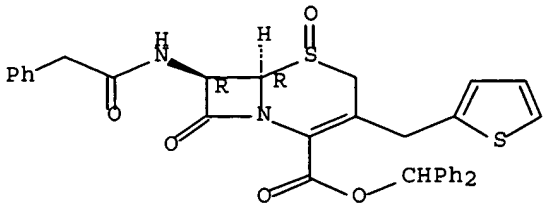
Absolute stereochemistry.



RN 36242-74-7 USPATFULL

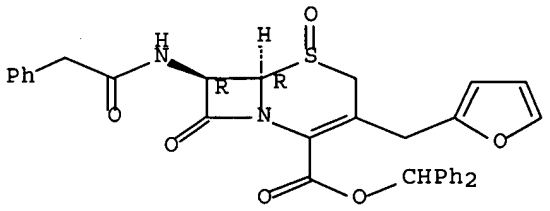
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-7-[(phenylacetyl)amino]-3-(2-thienylmethyl)-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



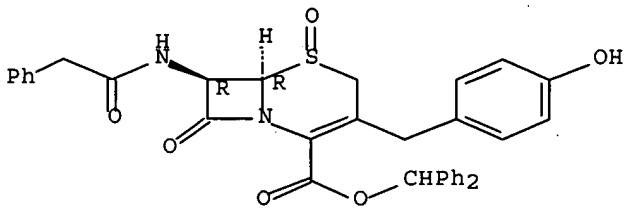
RN 36242-75-8 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-(2-furanylmethyl)-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



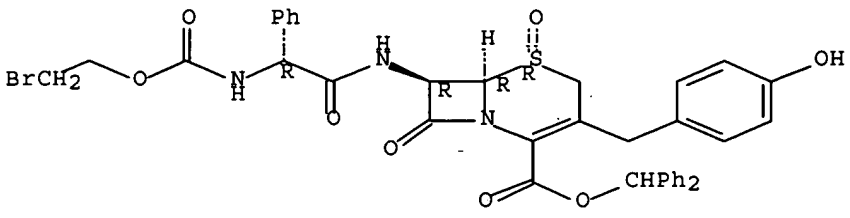
RN 36242-76-9 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(4-hydroxyphenyl)methyl]-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



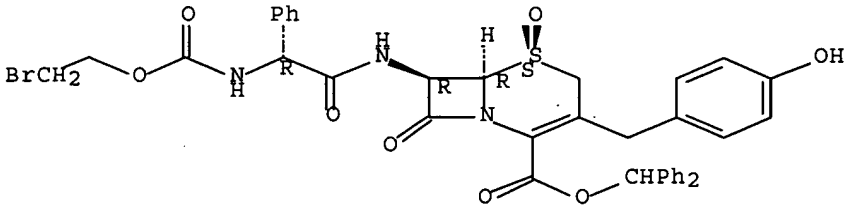
RN 36242-77-0 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[(2-bromoethoxy)carbonyl]amino]phenylacetyl]amino]-3-[(4-hydroxyphenyl)methyl]-8-oxo-, diphenylmethyl ester, 5-oxide, [5R-[5α,6α,7β(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



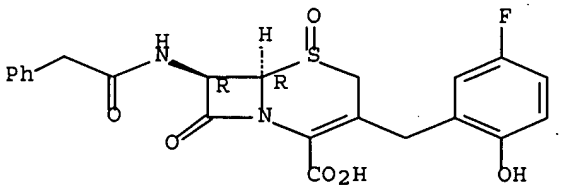
RN 36242-78-1 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[(2-bromoethoxy)carbonyl]amino]phenylacetyl]amino]-3-[(4-hydroxyphenyl)methyl]-8-oxo-, diphenylmethyl ester, 5-oxide, [5S-[5α,6β,7α(S*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



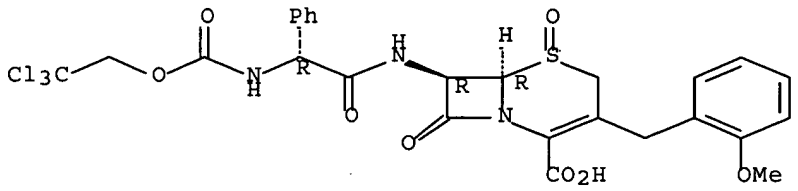
RN 36242-79-2 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(5-fluoro-2-hydroxyphenyl)methyl]-8-oxo-7-[(phenylacetyl)amino]-, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



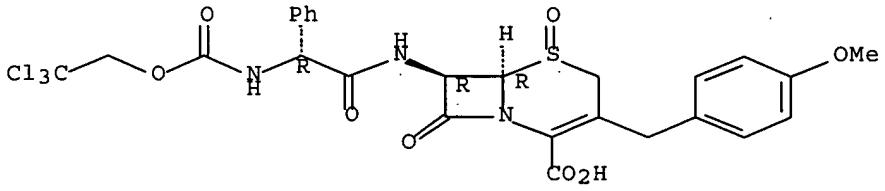
RN 36242-80-5 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(2-methoxyphenyl)methyl]-8-oxo-7-[[[[(2,2,2-trichloroethoxy)carbonyl]amino]phenylacetyl]amino]-, 5-oxide, [6R-[6α,7β(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



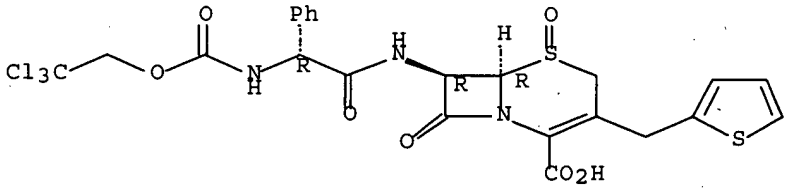
RN 36242-81-6 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(4-methoxyphenyl)methyl]-8-oxo-7-[[[[(2,2,2-trichloroethoxy)carbonyl]amino]phenylacetyl]amino]-, 5-oxide, [6R-[6α,7β(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



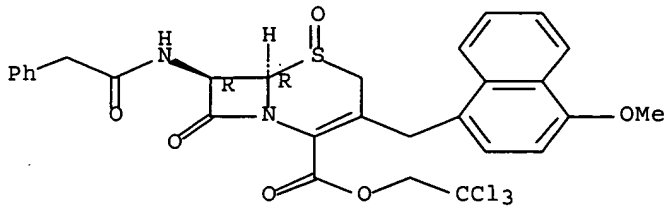
RN 36242-82-7 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 8-oxo-3-(2-thienylmethyl)-7-[[[[(2,2,2-trichloroethoxy)carbonyl]amino]phenylacetyl]amino]-, 5-oxide, [6R-[6α,7β(R*)]]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



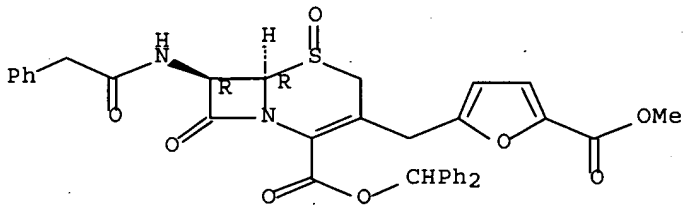
RN 36406-59-4 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[(4-methoxy-1-naphthalenyl)methyl]-8-oxo-7-[(phenylacetyl)amino]-, 2,2,2-trichloroethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



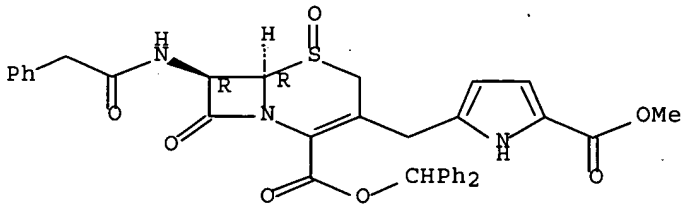
RN 36406-60-7 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[[5-(methoxycarbonyl)-2-furanyl]methyl]-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



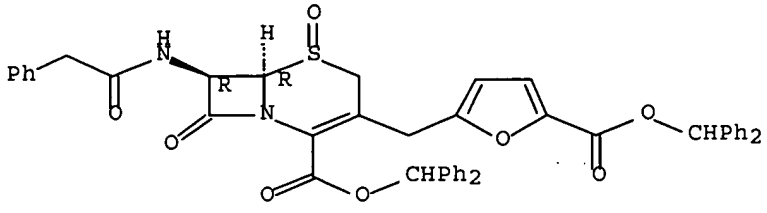
RN 36406-61-8 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[[5-(methoxycarbonyl)-1H-pyrrol-2-yl]methyl]-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 36488-97-8 USPATFULL
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[[5-[(diphenylmethoxy)carbonyl]-2-furanyl]methyl]-8-oxo-7-[(phenylacetyl)amino]-, diphenylmethyl ester, 5-oxide, [6R-(6α,7β)]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.


Ph
H
N
O
R
H
R
S
O
N
O
O
CHPh2
O
O
O
O
CHPh2

```
=> d his full

     (FILE 'HOME' ENTERED AT 14:31:03 ON 11 DEC 2006)

     FILE 'REGISTRY' ENTERED AT 14:31:07 ON 11 DEC 2006
L1                STRUCTURE UPLOADED
L2              8 SEA SSS SAM L1
                  D SCA
L3            178 SEA SSS FUL L1
                  SAVE TEMP L3 BER486STR1L/A

     FILE 'CAPLUS' ENTERED AT 14:34:05 ON 11 DEC 2006
L4             82 SEA ABB=ON  PLU=ON  L3
L5           4869 SEA ABB=ON  PLU=ON  ?FLUOROGEN?/BI
                  D KWIC 1-3
                  E ?FLUORESCEN?/BI
L6         484544 SEA ABB=ON  PLU=ON  ?FLUORESCEN?/BI
L7         380423 SEA ABB=ON  PLU=ON  DYE?/BI
L8         381931 SEA ABB=ON  PLU=ON  ?DYE?/BI
L9          39403 SEA ABB=ON  PLU=ON  ?CHROMOPHOR?/BI
L10             7 SEA ABB=ON  PLU=ON  L4 AND (L5 OR L6 OR L7 OR L8 OR L9)
                  D SCA

     FILE 'STNGUIDE' ENTERED AT 14:37:07 ON 11 DEC 2006

     FILE 'CAPLUS' ENTERED AT 14:38:10 ON 11 DEC 2006
                  E US2002-044486/APPS
L11             1 SEA ABB=ON  PLU=ON  US2002-044486/APPS
                  D SCA
L12             1 SEA ABB=ON  PLU=ON  L10 AND L11
L13         11130 SEA ABB=ON  PLU=ON  ?FLUOROPHOR?/BI
L14             1 SEA ABB=ON  PLU=ON  L4 AND L13

     FILE 'USPATFULL' ENTERED AT 14:40:19 ON 11 DEC 2006
L15            36 SEA ABB=ON  PLU=ON  L3
L16          6627 SEA ABB=ON  PLU=ON  ?FLUOROGEN?
L17        208657 SEA ABB=ON  PLU=ON  ?FLUORESCEN?
L18        267900 SEA ABB=ON  PLU=ON  DYE?
L19         20051 SEA ABB=ON  PLU=ON  ?CHROMOPHOR?
L20         18544 SEA ABB=ON  PLU=ON  ?FLUOROPHOR?
L21            11 SEA ABB=ON  PLU=ON  L15 AND (L16 OR L17 OR L18 OR L19 OR L20)

     FILE 'CAPLUS' ENTERED AT 14:42:08 ON 11 DEC 2006
                  SEL PN L10

     FILE 'USPATFULL' ENTERED AT 14:42:53 ON 11 DEC 2006
L22             5 SEA ABB=ON  PLU=ON  (WO2002068678/PN OR WO2004090104/PN OR
                  WO2005059163/PN OR WO2005071096/PN OR CA2434679/PN OR EP1385853
                  /PN OR EP1616032/PN OR EP1674579/PN OR EP1704244/PN OR
                  EP1711504/PN OR JP2005501806/PN OR US2003003526/PN OR US2005118
                  669/PN OR US2005181469/PN OR US2005227309/PN OR US2005244907/PN
                   OR WO2005024049/PN OR WO2006085978/PN)
L23             6 SEA ABB=ON  PLU=ON  L21 NOT L22

     FILE 'CAPLUS, USPATFULL' ENTERED AT 14:43:26 ON 11 DEC 2006
L24            13 DUP REM L10 L23 (0 DUPLICATES REMOVED)
                        ANSWERS '1-7' FROM FILE CAPLUS
                        ANSWERS '8-13' FROM FILE USPATFULL
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     FILE 'CAPLUS' ENTERED AT 14:43:45 ON 11 DEC 2006
                SEL AN L10

     FILE 'USPATFULL' ENTERED AT 14:43:59 ON 11 DEC 2006
L25             1 SEA ABB=ON  PLU=ON  ("137:197525"/AN OR "139:287990"/AN OR
                  "141:389858"/AN OR "142:312727"/AN OR "143:189108"/AN OR
                  "143:22126"/AN OR "143:93614"/AN OR "2002:676218"/AN OR
                  "2003:643607"/AN OR "2004:878473"/AN OR "2005:239156"/AN OR
                  "2005:474830"/AN OR "2005:571011"/AN OR "2005:697024"/AN)
L26             0 SEA ABB=ON  PLU=ON  L25 AND L23

     FILE 'USPATFULL' ENTERED AT 14:44:44 ON 11 DEC 2006
                D KWIC L23 1-6

     FILE 'CAPLUS' ENTERED AT 14:46:28 ON 11 DEC 2006
                SEL HIT RN L10

     FILE 'REGISTRY' ENTERED AT 14:46:45 ON 11 DEC 2006
L27            18 SEA ABB=ON  PLU=ON  (452280-30-7/BI OR 452280-31-8/BI OR
                  609812-89-7/BI OR 609812-90-0/BI OR 452280-32-9/BI OR 609812-78
                  -4/BI OR 609812-82-0/BI OR 609812-85-3/BI OR 609812-91-1/BI OR
                  847978-56-7/BI OR 847978-57-8/BI OR 852671-27-3/BI OR 852671-28
                  -4/BI OR 852671-29-5/BI OR 852671-30-8/BI OR 852671-32-0/BI OR
                  861669-96-7/BI OR 861670-03-3/BI)
                D SCA

     FILE 'REGISTRY' ENTERED AT 14:49:25 ON 11 DEC 2006

     FILE 'CAPLUS' ENTERED AT 14:50:55 ON 11 DEC 2006
                D STAT QUE L10
                D STAT QUE L14

     FILE 'USPATFULL' ENTERED AT 14:51:22 ON 11 DEC 2006
                D STAT QUE L23

     FILE 'CAPLUS, USPATFULL' ENTERED AT 14:51:50 ON 11 DEC 2006
L28             13 DUP REM L10 L14 L23 (1 DUPLICATE REMOVED)
                        ANSWERS '1-7' FROM FILE CAPLUS
                        ANSWERS '8-13' FROM FILE USPATFULL
                D IBIB ABS HITIND HITSTR L28 1-7
                D IBIB ABS KWIC HITSTR L28 8-13


     FILE HOME

     FILE REGISTRY
     Property values tagged with IC are from the ZIC/VINITI data file
     provided by InfoChem.

     STRUCTURE FILE UPDATES:   10 DEC 2006  HIGHEST RN 915124-84-4
     DICTIONARY FILE UPDATES:  10 DEC 2006  HIGHEST RN 915124-84-4

     New CAS Information Use Policies, enter HELP USAGETERMS for details.

     TSCA INFORMATION NOW CURRENT THROUGH June 30, 2006

       Please note that search-term pricing does apply when
       conducting SmartSELECT searches.
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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

http://www.cas.org/ONLINE/UG/regprops.html

FILE CAPLUS

FILE COVERS 1907 - 11 Dec 2006 VOL 145 ISS 25
FILE LAST UPDATED: 10 Dec 2006 (20061210/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

http://www.cas.org/infopolicy.html

FILE STNGUIDE
FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Dec 8, 2006 (20061208/UP).

FILE USPATFULL
FILE COVERS 1971 TO PATENT PUBLICATION DATE: 7 Dec 2006 (20061207/PD)
FILE LAST UPDATED: 7 Dec 2006 (20061207/ED)
HIGHEST GRANTED PATENT NUMBER: US7146645
HIGHEST APPLICATION PUBLICATION NUMBER: US2006277640
CA INDEXING IS CURRENT THROUGH 7 Dec 2006 (20061207/UPCA)
ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 7 Dec 2006 (20061207/PD)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2006
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2006

=>

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Scientific and Technical Information Center

SEARCH REQUEST FORM

Requester's Full Name: MARK BERCH Examiner # : 59193 Date: 12/29/06

Art Unit: 1624 Phone Number: 2- 0663 Serial Number: 10/044486

Location (Bldg/Room#): 5C01 (Mailbox #): 5C18 Results Format Preferred (circle): PAPER DISK

****

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: ______

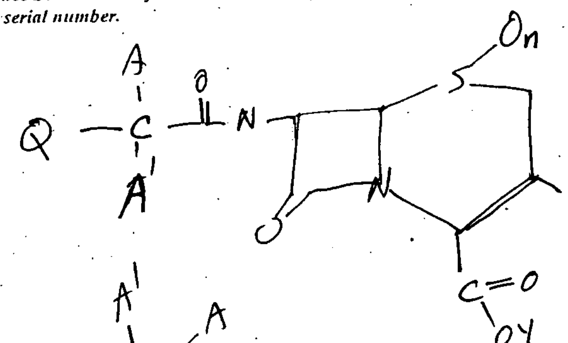
Inventors (please provide full names): PULL GREEN FOLDER when this comes

Earliest Priority Date: ______ first of 2 sheets

Search Topic:

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

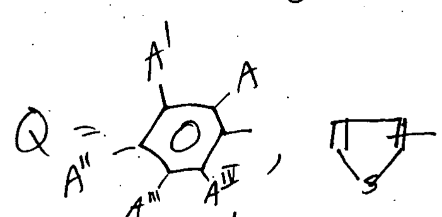


all A = A, A', A'' = H/CH3

s/D-chain only

C = L AM

Y = H/M, C1-5 alkyl or C-O-C(=O)-C



or N≡C—

L = C/N

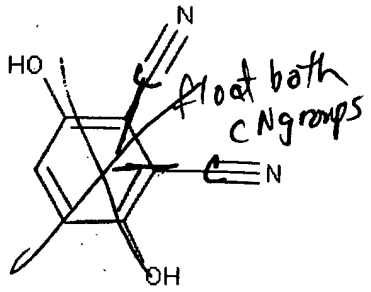
n = 1 or 2 (not zero)

Compound must have attached to it one of the fluorogenic, fluorescent dye, chromophore groups on attached second sheet

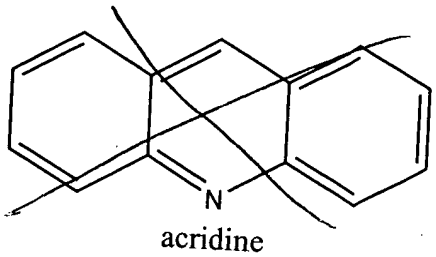
PY ≤ 2004

Second of 2 sheets

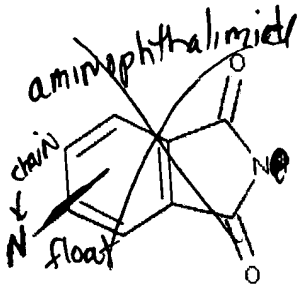
10/044486

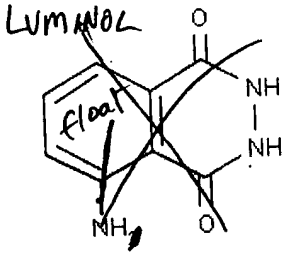


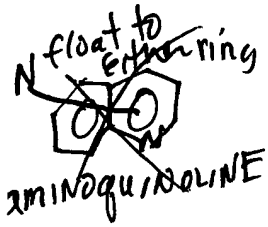
dicyanohydroquinone



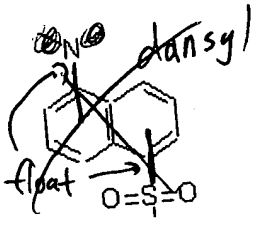
acridine

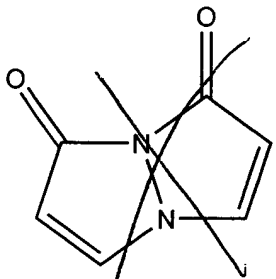






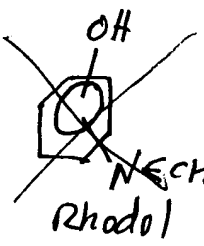
aminoquinoline



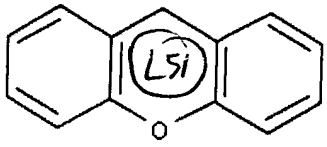


1,5-diazabicyclo[3.3.0]octa-3,6-diene-2,8-dione

BIMANE



Rhodol



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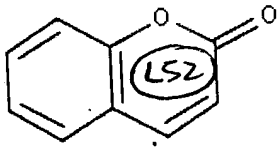
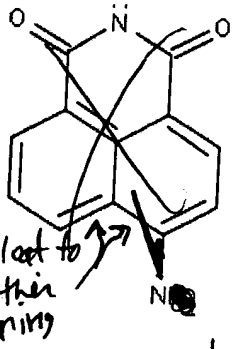
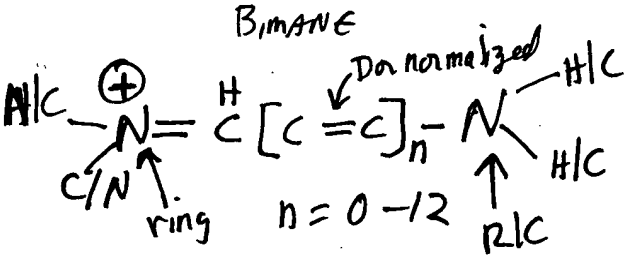


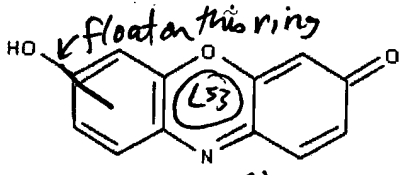
COUMARIN



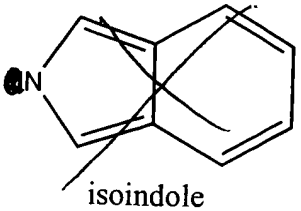
amino naphthalimide



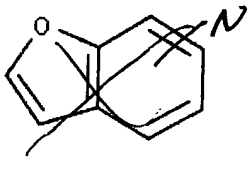
Cyanine

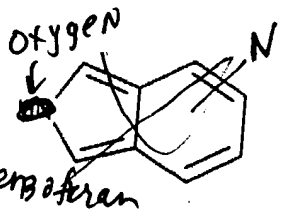


Resorufin



isoindole





amino benzofuran

or the metal Eu or Tb